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Serbia
Health system review

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European Observatory on Health Systems and Policies
a partnership hosted by WHO

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PREFACE

The Health Systems in Transition (HiT) series consists of country-based reviews that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each review is produced by country experts in collaboration with the Observatory's staff. In order to facilitate comparisons between countries, reviews are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a report.

HiTs seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe. They are building blocks that can be used to:

- learn in detail about different approaches to the organization, financing and delivery of health services, and the role of the main actors in health systems;
- describe the institutional framework, process, content and implementation of health care reform programmes;
- highlight challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- assist other researchers in more in-depth comparative health policy analysis.

Compiling the reviews poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including the World Health Organization (WHO) Regional Office for Europe's European Health for All database, data from national

statistical offices, Eurostat, the Organisation for Economic Co-operation and Development (OECD) Health Data, data from the International Monetary Fund (IMF), the World Bank's World Development Indicators and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate review.

A standardized review has certain disadvantages because the financing and delivery of health care differ across countries. However, it also offers advantages because it raises similar issues and questions. HiTs can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situations. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to info@obs.euro.who.int.

HiTs and HiT summaries are available on the Observatory's website (http://www.healthobservatory.eu).

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This edition was written by Vesna Bjegovic-Mikanovic (Centre School of Public Health, University of Belgrade), Milena Vasic (Institute of Public Health of Serbia "Dr Milan Jovanović Batut"), Dejana Vukovic, Janko Jankovic, Aleksandra Jovic-Vranes, Milena Santric-Milicevic and Zorica Terzic-Supic (Centre School of Public Health, University of Belgrade). It was edited by Cristina Hernández-Quevedo, working with the support of Ewout van Ginneken, Berlin Hub Coordinator of the European Observatory of Health Systems and Policies. Internal review of the report was provided by Bernd Rechel and Anna Maresso (European Observatory on Health Systems and Policies).

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The Observatory is a partnership that includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland and the United Kingdom; the Veneto Region of Italy; the French National Union of Health Insurance Funds (UNCAM); the World

Health Organization; the European Commission; the World Bank; the Health Foundation; the London School of Economics and Political Science (LSE); and the London School of Hygiene & Tropical Medicine (LSHTM). The partnership is hosted by the WHO Regional Office for Europe. The Observatory is composed of a Steering Committee, core management team, research policy group and staff. Its Secretariat is based in Brussels and has offices in London at LSE, LSHTM and the Technical University of Berlin. The Observatory team working on HiTs is led by Josep Figueras, Director; Elias Mossialos, Martin McKee, Reinhard Busse (Co-directors); Richard Saltman, Ewout van Ginneken and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Anna Maresso. The production and copy-editing process of this HiT was coordinated by Jonathan North, with the support of Caroline White, Andrea Kay (copy-editing) and Steve Still (design and layout).

LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ALIMS	Medicines and Medical Devices Agency
ALOS	Average length of stay
ATC	Anatomical Therapeutic Chemical Groups
AZUS	Agency for Accreditation of Health Care Institutions
BMI	Body mass index
CAQA	Commission for Accreditation and Quality Assurance
CDC	Central Drug Committee
CPR	Cardiopulmonary resuscitation
CT	Computerized tomography
DDD	Defined daily dose
DILS	Delivery of Improved Local Services
DRG	Diagnosis-related group
DTP	Diphtheria, tetanus and pertussis
EC	European Commission
ECDC	European Centre for Disease Prevention and Control
ECTS	European Credit Transfer and Accumulation System
EHR	Electronic Health Record
EAR	European Agency for Reconstruction
EIB	European Investment Bank
EMA	European Medicines Agency
ESSPROS	European System of Integrated Social Protection Statistics
EU	European Union
EUR	Euro
FFS	Fee-for-service
GDP	Gross domestic product
GP	General practitioner
HIV	Human immunodeficiency virus

HPV	Human papillomavirus
HTA	Health technology assessment
ICT	Information communication technology
IHIS	Integrated health information system
INN	International nonproprietary name
IPA	Instruments for pre-accession
IPH	Institute of Public Health
IT	Information Technology
MICS	Multiple Indicator Cluster Survey
MMR	Measles, mumps and rubella
MRI	Magnetic resonance imaging
NCD	Noncommunicable diseases
NGO	Nongovernmental organization
NHIF	National Health Insurance Fund
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket
PET	Positron emission tomography
PPP	Purchasing power parity
SCTM	Standing Conference of Towns and Municipalities
SDR	Standardized death rate
SEEHN	South-eastern Europe Health Network
SILC	Survey on Income and Living Conditions
SIPRU	Social Inclusion and Poverty Reduction Unit
SORS	Statistical Office of the Republic of Serbia
SSI	State Sanitary Inspectorate
TB	Tuberculosis
THE	Total Health Expenditure
UN	United Nations
UNICEF	United Nations Children's Fund
USD	US Dollars
VAT	Value Added Tax
VHI	Voluntary Health Insurance
YLL	Year of Life Lost
WB	World Bank
WHO	World Health Organization

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ABSTRACT

This analysis of the Serbian health system reviews recent developments in organization and governance, health financing, health care provision, health reforms and health system performance.

The health of the Serbian population has improved over the last decade. Life expectancy at birth increased slightly in recent years, but it remains, for example, around 5 years below the average across European Union countries. Some favourable trends have been observed in health status and morbidity rates, including a decrease in the incidence of tuberculosis, but population ageing means that chronic conditions and long-standing disability are increasing.

The state exercises a strong governance role in Serbia's social health insurance system. Recent efforts have increased centralization by transferring ownership of buildings and equipment to the national level. The health insurance system provides coverage for almost the entire population (98%). Even though the system is comprehensive and universal, with free access to publicly provided health services, there are inequities in access to primary care and certain population groups (such as the most socially and economically disadvantaged, the uninsured, and the Roma) often experience problems in accessing care. The uneven distribution of health professionals across the country and shortages in some specialities also exacerbate accessibility problems. High out-of-pocket payments, amounting to over 40% of total expenditure on health, contribute to relatively high levels of self-reported unmet need for medical care.

Health care provision is characterized by the role of the "chosen doctor" in primary health care centres, who acts as a gatekeeper in the system. Recent public health efforts have focused on improving access to preventive health services, in particular, for vulnerable groups. Health system reforms since 2012 have focused on improving infrastructure and technology, and on implementing an integrated health information system. However, the country lacks a transparent and comprehensive system for assessing the benefits of health care investments and determining how to pay for them.

EXECUTIVE SUMMARY

Population health is generally improving but cancer incidence rates have increased

Serbia is situated in south-east Europe with a population of slightly below 7 million people. A range of indicators shows that the health of the population has improved over the last few decades. In 2017 average life expectancy reached 73.6 years for males and 78.7 years for females. The overall average (76.1 years in 2017), however, is lower than the average life expectancy found across European Union countries. Positive trends can be seen in the reduced incidence of tuberculosis as well as of HIV, and in infant and maternal mortality. However, cancer incidence rates are increasing, making it one of the main causes of death, along with ischaemic coronary diseases and cerebrovascular diseases. Tobacco consumption remains high, with 34.7% of the population being daily smokers in 2013, while the obesity rate among adults (21.1%) is slightly below the EU average (22.5%).

After democratic changes in 2000, the health sector obtained urgently needed humanitarian aid from abroad (e.g. through the European Stability Pact); projects for infrastructure renewal; and financial and technical support for institutional and professional capacity-building to support the development of health services and to improve the health of the population. At the same time, economic reforms were started, involving the privatization of large companies, privatization and consolidation of banks, re-establishment of capital markets and infrastructure development. Accession negotiations with the European Union (EU) officially started in January 2014, but health projects and programmes have not yet been discussed.

The state exercises a strong governance role in the social health insurance system

The health system is based on compulsory health insurance, with contributions as the main source of financing and broad population coverage. The state owns the majority of health facilities and equipment. The main purchaser of publicly funded health services is the National Health Insurance Fund (NHIF).

The basic infrastructure and organization of the health system was inherited from the period when the country was part of the former Yugoslavia. Since 2000, general health reforms have attempted to rehabilitate and modernize health facilities and equipment and to improve technology, supported by extensive international humanitarian aid. National legislation allows private health care providers to operate, but their services are covered predominantly by private out-of-pocket payments.

The health system's administrative structure is characterized by centralized state governance with an unregulated private sector, which has developed without much control or state support. Prior to 2019, the state had transferred ownership of primary care facilities and equipment to local government, along with responsibility for the management, capital investment, and development of specific health care plans and local public health programmes aligned to the needs of the local population. However, the recently approved Health Care Law (2019) envisions re-centralization by transferring ownership of buildings and equipment of primary care institutions to the national level. Both this Law and the 2019 Health Insurance Law reinforce the need for patients to have a "chosen doctor", that is, a designated primary care doctor who provides them with health services and acts as a gatekeeper to higher levels of care.

Broad population coverage is accompanied by high private spending on health

Serbia spends a considerable amount of its resources on health care. In 2017, total health expenditure accounted for 8.8% of GDP. This translates to US$ 1 319 per capita (adjusted for differences in purchasing power). Public sources of health funding have steadily decreased over the last decade, reaching 57.6%

of total expenditure on health in 2017. Consequently, private expenditure on health is a significant source of financing, amounting to 42.4% of total health expenditure in 2017. Out-of-pocket (OOP) payments by patients, in the form of co-payments and direct payments, make up the overwhelming majority of this private spending (around 96% of it) while voluntary health insurance (VHI) makes up less than 1% of total health spending.

Compulsory health insurance contributions, from the nationally pooled health insurance fund, the NHIF, represent the largest share of total health revenue from public sources (94%). At present, the system of social health insurance financing is highly regressive, placing most of the financing burden on public employees and the smallest portion on the self-employed, who are often the wealthier segments of the population.

Serbian citizens, as well as people with permanent or temporary residence, have the right to access publicly financed health services. Almost the entire population (98%) is covered by health insurance. This includes the 20% of the population whose health insurance contributions are financed from the central state budget (2017 data). Mandatory health insurance includes the right to health care, the right to salary reimbursement during temporary work disability and the right to having health-related travel costs reimbursed.

Payment of health services is determined by annually renewed contracts between the NHIF and health care providers. Financing is input-oriented, based on line-item budgets (for all health care providers except pharmacies, rehabilitation hospitals and public health institutes). Capitation payments were introduced in 2012 in primary health care institutions that provide services by a "chosen doctor" (e.g. General Practitioners (GPs), paediatricians, gynaecologists), while a new model of payment based predominantly on diagnosis-related groups (DRGs) was introduced for hospitals in 2019.

Investment in health infrastructure is increasing

A total of 355 facilities made up the country's network of publicly provided health care institutions, organized at the primary, secondary and tertiary levels, in 2016. The number of acute beds in hospitals fell by around 16% between 1990 and 2016. In 2016, there were 462 acute beds per 100 000 population, the average length of stay in acute hospitals was 6.6 days, and the bed occupancy rate was 63.8%. While these figures indicate generally lower

efficiency in acute inpatient care, the introduction of a DRG payment system is expected to kick-start improvements in the performance of acute hospitals.

As part of health care reforms in 2003, the technical condition and level of equipment in health care institutions were upgraded through the assistance of numerous international projects. Initiatives for e-health are promoted by the government, but are still at an early stage of development.

The numbers of physicians and nurses per 100 000 inhabitants increased between 1991 (212 and 431, respectively) and 2016 (302 and 605, respectively); this increase is in line with other neighbouring countries such as Romania and Slovenia, but below the average for the EU (339 and 756, respectively). Serbia currently does not have an official health workforce strategy. The distribution of health professionals is unequal across the country and there is a shortage of some specialities. Current health workforce policies aim to maintain present staffing levels while trying to address these shortages. Certificates issued to allow health professionals to work abroad give an indication of their intention of work abroad, but information on actual workforce migration trends is lacking.

An extensive network of state-owned providers delivers the majority of care

The Ministry of Health is the main body responsible for regulating and supervising health care and public health, in both the state and private sectors. Health services are provided through a wide network of health institutions. The most important for public health at the regional level are the Institutes of Public Health (IPHs), which are coordinated at the national level by the Institute of Public Health of Serbia "Dr Milan Jovanović Batut".

Health care is organized at three levels: primary, secondary and tertiary. Services at the primary level are provided by a state-owned network of primary health care centres. Primary care is provided by a "chosen doctor" (who is either a medical doctor or a specialist in general medicine, in occupational medicine, in paediatrics, in gynaecology or a dentist). Patients are assigned to the primary care centre in the area where they live. Secondary care includes outpatient or inpatient care in hospitals. Tertiary care has the most specialized personnel and technological equipment and provides diagnostic and curative services. All three levels are closely interconnected, and

patient pathways are well organized. Emergency care is organized within two functionally linked sub-systems: prehospital emergency medical care and inpatient emergency care.

The Health Care Law (2019) also regulates pharmaceutical services together with the Health Insurance Law (2019) and the Law on Medicines and Medical Devices (2010). In 2016, domestic manufacturers held 38% of the pharmaceutical market share. The NHIF covers pharmaceuticals which are on the Positive List of Drugs.

Long-term and palliative care is mainly provided by family members and private organizations. The Ministry of Health established a Commission for Palliative Care in 2004, resulting in the creation of the 2009 National Strategy for Palliative Care and an Action Plan for implementation. For mental health care there are five special psychiatric hospitals with 3 250 beds. A Law on the Protection of Persons with Mental Disabilities was passed 2013.

Health system reform has been imbedded in wider public sector reforms

Since 2000, significant progress has been made in the development of health policy. The aim of an ambitious reform programme, undertaken from 2004 to 2010, was to strengthen preventive services with the view to decreasing rates of preventable diseases and total health care costs. After 2012, reforms focused on improving infrastructure, technology and implementing an integrated health information system. Reforms also included the restructuring of hospitals to respond more effectively to patient needs and the development of a new basic package of health services aligned with existing resources. The reform of the payment system for primary care has focused on introducing capitation (starting with primary health care centres that provide services by a "chosen doctor"), while a model of DRGs has been introduced for payments in hospitals. However, implementation of some reforms is still pending, such as the establishment of municipal health councils as multidisciplinary bodies to support health, or the establishment of a realistic plan for human resources.

Several challenges need to be met to improve health system performance

Serbia's health system is characterized by high debt, given the low income derived from social health insurance contributions (which are not enough to cover operational expenses) and insufficient funds from the state budget. This situation, as well as the high reliance on private expenditure (42.4% of total health spending), mainly derived from patient OOP payments, poses an important challenge for the financial sustainability of the health system. In addition, informal payments are used, with the health system perceived to be one of the public sectors most susceptible to corruption. Important anti-corruption measures (such as legislative amendments, strengthened inspection capacities, improvements in quality control and information systems) included in the 2013–2018 National Anti-corruption Strategy, as well as the establishment of the Anti-corruption Agency in 2010, are initiatives designed to tackle this endemic problem.

In terms of accessibility, Serbia has a comprehensive universal health system with free access to health care services at the primary level, but there are inequalities in the utilization of health services, with the most disadvantaged, uninsured and Roma people experiencing more problems in accessing care. Financial constraints are the main reason for unmet needs for medical care, which are more frequent among people with lower educational attainment and the poorest sector of the population. In addition, a survey on catastrophic OOP payments among the population found that 2.3% of respondents were affected, with higher prevalence rates in rural areas, larger households, the poorest households and for those who are chronically ill. Long waiting times also impede accessibility of health services. Although the National Health Survey (2013) shows that citizens are generally satisfied with public and private health care services, nearly half of patients who underwent an intervention in 2013 had to go on a waiting list, and only one third of the listed patients received treatment.

There is scope for improving health system performance in terms of technical and allocative efficiency. The present system of financing encourages inefficiency in the use of resources and provides few incentives for improved service volume and quality. The provider payment system for both primary and hospital care remains input-based, with few if any incentives for quality or efficiency, although it is being slowly changed to a capitation

system in primary care and a DRG model for hospital care. Health care has generally been underfunded for many years due to resource constraints, and publicly funded health services are generally of lower quality than in EU countries. Moreover, Serbia lacks a transparent and comprehensive system for assessing the benefit of health care investments and determining how to pay for them. For example, the use of Health Technology Assessment (HTA) is not systematically applied using criteria such as clinical efficacy and cost–effectiveness to aid decision-making on health technologies and health services reimbursement, although it is used in more systematic way for assessing medicines.

Finally, although Serbia spends 8.8% of its GDP on health, this spending is not fully translating into positive health outcomes. The highest burden of disease in Serbia is due to noncommunicable diseases (NCDs), namely cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes, with standardized death rates from cardiovascular disease and cancer being among the highest in Europe. High mortality rates can partly be explained by lack of timeliness in visiting a doctor and subsequent diagnosis at a later stage of the disease when treatment is less successful and death is more likely, as well as, for example, lack of access to the newest drugs for all cancer patients in need, and longer waiting lists for radiotherapy. The coverage of target populations for cancer screening at national level is still very low, despite national programmes being in place. Tobacco and alcohol consumption rates have been increasing since 2006, as have obesity rates among adults, with these risk factors contributing to the population's disease burden. There are no national strategies addressing alcohol or obesity but the government has made attempts to respond to the high smoking rates through a smoking ban in public and in workplaces as well as on public transport, although the ban currently excludes the hospitality sector (and thus does not apply in restaurants, bars, etc.). Higher cigarette prices were also imposed, along with health warnings on cigarette packs and a ban on advertising and sponsorship by the tobacco industry.

1

Introduction

Summary

- Serbia is situated at the crossroads of central and south-east Europe, with a population of nearly 7 million people, although the population has decreased steadily in the last decade, largely due to outmigration.

- Macroeconomic indicators show a stable increase in GDP in 2005–2018, only changing during the economic crisis, which severely affected the financial stability of Serbia. Serbia started economic reforms in 2000, which included the privatization of large companies.

- Serbia is a parliamentary democracy, based on the separation of executive, legislative and judicial powers; it is a candidate country for the EU. After democratic changes in 2000, the health sector obtained urgently needed humanitarian aid from abroad and different projects were funded to improve infrastructure as well as to develop health services and improve the health of the population.

- Health status has improved, with average life expectancy at birth increasing since 2000 and reaching 76.1 years in 2017, with ischaemic coronary diseases, cerebrovascular diseases and cancer being the main causes of death.

- Risk factors such as tobacco consumption remain high (34.7% in 2013), and 16% of the population reported binge drinking in 2013, while obesity is below the EU average.

- Other positive trends can be seen in the reduction of the incidence of tuberculosis as well as of HIV, and in infant and maternal mortality, although cancer incidence is increasing.

1.1 Geography and sociodemography

Serbia is situated at the crossroads of central and south-east Europe. It is located in the Balkans, a region of south-east Europe (about 75% of the territory) and in the Pannonian Plain, a region of central Europe (about 25% of the territory). It borders Hungary to the north, Romania and Bulgaria to the east, North Macedonia to the south, Montenegro to the southwest, and Bosnia and Croatia to the west. The territory of Kosovo* borders Albania in the northwest (Fig. 1.1). After the break-up of the Socialist Federal Republic of Yugoslavia in 1991, Serbia and Montenegro remained together as the Federal Republic of Yugoslavia (FRY) until 2003, when they were renamed as State Union of Serbia and Montenegro until 2006. On 21 May 2006, a referendum in Montenegro led to its final separation and Serbia became an independent state.

Serbia covers a total of 88 361 km^2, including Kosovo, with 10 908 km^2. Serbia is a largely mountainous country (38.5% of the total area); the mountainous terrain covers southern Serbia, which is roughly one third of the country's territory. The Pannonian Plain covers one quarter of the Serbian territory. The central part of the country is called Sumadija and its terrain consists mainly of hills and rivers.

Serbia covers four statistical regions: Vojvodina, Belgrade, Sumadija and western Serbia, and southern and eastern Serbia. The capital of Serbia is Belgrade, with 1 962 inhabitants (SORS, 2016a). The population of Serbia, according to the latest census from 2011, was 7 519, with 59.44% living in urban centres (SORS, 2011a). In 2018, the population was estimated at 6 084 (see Table 1.1). In the period between the last two censuses (2002–2011),

* All references to Kosovo in this document should be understood to be in the context of the United Nations Security Council Resolution 1244/99 [http://www.un.org/docs/scres/1999/sc99.htm].

the number of inhabitants has been decreasing continuously, and this trend continued after the 2011 census. Population growth was the lowest in the southern and eastern regions in Serbia.

FIGURE 1.1 Map of Serbia



Source: Based on UN, 2007

The number of asylum-seekers between 2006 and 2015 decreased from 98 997 to 35 332. Between 2015 and 2016, the western Balkans experienced a huge movement of migrants and refugees towards the EU. Serbia's role has mainly been that of a transit country (Government of Serbia, 2015).

TABLE 1.1 Trends in population/demographic indicators, 1990–2018 (selected years)

	1990	1995	2000	2005	2010	2015	2018
Total population	7 000	7 357	7 346	7 769	7 436	7 383	6 084
Population aged 0–14 (% of total)	23.8	22.1	20.5	18.6	17.3	16.7	16.3
Population aged 65 and above (% of total)	9.6	11.4	13.5	14.6	14.5	16.3	17.9
Population growth (annual %)	0.1	–1.4	–0.3	–0.3	–0.4	–0.5	–0.6
Population density (people per km^2)	86.7	87.2	85.9	85.1	83.4	81.1	79.8
Fertility rate, total (births per woman)	1.80 (1991)	1.70	1.48	1.45	1.40	1.46	1.46 (2017)
Urban population (% of total)	50.4	51.8	53.2	54.5	55.2	55.6	56.1

Source: World Bank, 2019a

In the 2011 census, 83.32% of the population self-identified as ethnic Serbs. The dominant minority groups were: Hungarians (3.53%), Roma (2.05%), and Bosniaks (2.02%). Other minorities included Croats, Slovaks, Montenegrins, Vlachs, Romanians and others (SORS, 2011b).

The official language of the country is Serbian. Languages of minority groups include Hungarian, Bosnian, Croatian, Slovakian, Albanian, Romanian and Bulgarian. Members of minority groups can freely use their language, both privately and publicly. The language of each minority is in official use in any territory where the ethnic minority reaches 15% of the total population according to the last census (SORS, 2011b).

1.2 Economic context

Serbia is an upper middle-income economy (World Bank, 2019b). After political changes in 2001, Serbia started a period of transition towards a market economy. Economic reforms involved privatization of large companies, privatization and consolidation of banks, re-establishment of capital

markets and infrastructural development (Arandarenko & Mijatović, 2008).

The Serbian economy is based mainly on services which accounted for 51% of the GDP in 2018. Industry contributed to 25.9% of the GDP and agriculture to 6.2% of the GDP (WHO, 2019).

The Gross Domestic Product (GDP) increased steadily in the period 2005–2018 (see Table 1.2), except in 2009, when it dropped 3.12% because of the negative effects of the global economic crisis (Chamber of Commerce and Industry of Serbia, 2017a). The global financial crisis severely affected Serbia. It led to a decline in the availability of foreign funds, which resulted in a slowdown of economic growth with corresponding negative consequences for investment, securing additional capital, loans, employment and living standards (Prascevic, 2013).

In 2015, the financial system regained stability, mainly due to a reduction of the deficit in the current balance of payments, which at the end of 2015 was 4.8% of GDP. However, there was an increase in the share of public debt (from 41.8% of annual GDP in 2010 to 72.9% in 2016). The latest data show that the level of public debt is significantly above the limit defined by the 2009 Law on the Budget System (see section 6.1) (45% of GDP) at 61.6% of GDP in December 2017 (Ministry of Finance, 2017).

TABLE 1.2 Macroeconomic indicators, 1995–2018 (selected years)

	1995	2000	2005	2010	2015	2018
GDP per capita (current US$)	2 196.6	870.1	3 720.5	5 735.4	5 585.1	7 234.0
GDP per capita, PPP (current international US$)	4 880.1	5 725.2	9 181.7	12 797.3	14 922.1	16 433.4 (2017)
GDP average annual growth rate (%)	2.43 (1996)	7.8	5.5	0.7	1.8	4.3
Public expenditure (Government expenditure as % of GDP)	17.3	18.2	19.5	19.1	16.4	16.7
Public debt (% of GDP) [a]	–	201.2	50.2	41.8	74.7	61.6 (2017)
Unemployment, total (% of labour force)	13.4	12.6	20.9	19.2	17.7	12.7
Poverty rate [b]	–	–	–	–	26.7 [c]	24.3 [c]
Income inequality (Gini coefficient)	–	32.0 (2002)	36.5	29.0	28.5	–

Note: [a] Ministry of Finance of Serbia, 2017; [b] The share of persons with an equivalized disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalized disposable income (after social transfers); [c] Eurostat, 2019

Source: World Bank, 2019a

The Gini coefficient, as a measure of inequality of income or wealth, decreased slightly from 32 in 2002 to 28.5 in 2015. The at-risk-of-poverty rate was 24.3% in 2018 (see Table 1.2). In 2013, those most exposed to poverty risk were persons less than 18 years of age (29.7%), while persons aged 65 and over had the lowest at-risk-of-poverty rate (19.4%). Unemployed persons and households with two adults and three or more children had the highest at-risk-of-poverty rate (48.4% and 44.4%, respectively), followed by self-employed persons (38.3%) (SORS, 2013).

The Human Development Index for Serbia in 2018 was 0.799 and the country was ranked 63 out of 189 countries worldwide (UNDP, 2019).

1.3 Political context

Serbia is a parliamentary democracy. The form of the government is a republic, based on the division of powers between the executive, the legislative and the judicial powers.

The President of Serbia is the head of state. The president represents the Republic and is the supreme commander of its armed forces. In practice, the president's position is primarily ceremonial, with little governing power. The president is elected based on popular vote and can be elected for a maximum of two terms of 5 years each.

Executive power is exercised by the cabinet of presently 21 ministers, which is headed by the prime minister. The prime minister is chosen on the proposal of the president by the National Assembly. The government establishes and pursues policies, executes legislation, adopts regulations, proposes to the National Assembly legislation, directs and adjusts the work of public administration bodies and performs supervision of their work and administers other affairs stipulated by the Constitution and Law (Serbian Constitution, Article 123).

Legislative power is vested in the parliament, known as the National Assembly, which is composed of 250 proportionally elected deputies. The National Assembly also wields constitutional authority. The current parliament was chosen in elections in 2016 and consists of 250 members, out of which 158 are male (63.2%) and 92 are female (36.8%). There are 16 parliamentary groups; the largest one is the Serbian Progressive Party with 40.8% of all representatives.

The judicial power is vested in the Courts and is independent from the legislative and executive powers. The Courts have general and special jurisdiction and they are public authorities, independent and autonomous in their work.

Serbia was ranked 87 of 180 countries by Transparency International in 2019, with a score of 39/100. This score represents perceived level of public sector corruption on a scale of 0 (highly corrupted) to 100 (very clean) (Transparency International, 2019).

Serbia is a member of numerous international organizations such as the Council of Europe, the Organization for Security and Co-operation in Europe, UNDP, UNICEF, the World Bank, the World Health Organization, and is a candidate country for the EU (Ministry of Foreign Affairs, 2018a). The formal start of Serbia's EU accession negotiations was on 21 January 2014, but Chapter 28 on health has still not been opened in the negotiation process. The Government of Serbia has also ratified a range of international and regional human rights treaties, recognizing the right to health and other health-related rights (Ministry of Foreign Affairs, 2018a, 2018b).

1.4 Health status

Similarly to other countries in central and eastern Europe, Serbia has a low birth rate, a low fertility rate, a low rate of population growth and an increasing life expectancy, leading to the ageing of the population. While the crude birth rate decreased from 11.9 per 1 000 population in 1991 to 9.3 in 2016, the total fertility rate decreased from 1.8 in 1991 to 1.5 in 2015, far below the replacement level (IPH Batut, 2016a). The percentage of the population aged 65 and above increased from 9.6% in 1990 to 17.6% in 2016, while the population aged less than 14 years old decreased from 23.8% in 1990 to 16.6% in 2016 (World Bank, 2017).

1.4.1 *Life expectancy*

Life expectancy at birth has increased slightly in recent decades, from 71.5 years in 1991 to 76.1 years in 2017, remaining below the EU average of 81. Females live on average longer (78.7) than males (73.6) (2017 data).

At 5.1 years in 2017, the gender gap for life expectancy at birth in Serbia has remained fairly constant (see Table 1.3). Life expectancy is unequal across regions. Comparing districts, the highest life expectancy is found in Belgrade (total: 76.3, men: 74.2, women: 79.0 years), and the lowest in the Severnobanatski district in Vojvodina (total: 72.9, men: 69.7, women: 76.3 years) (IPH Batut, 2017d).

1.4.2 *Mortality*

The main causes of death in 2015 were cardiovascular diseases and cancers, accounting for almost three quarters of all deaths. Diseases of the circulatory system are the most common cause of death, with a standardized death rate (SDR) of 448.77 per 100 000 population in 2015 and representing 52.5% of all causes of death (males: 47.4%, females: 57.6%). These are followed by cancers (21.10%; males: 24.24%, females: 17.90%), and respiratory disease (5.36%; males: 6.23%, females: 4.48%). Furthermore, 2.9% of deaths were a consequence of injury and poisoning, 2.9% a consequence of diabetes complications, while 2.6% can be attributed to obstructive lung disease (IPH Batut, 2016a). Among males, the most common type of cancer in 2013 was lung cancer, accounting for 20.2% of all cancers, followed by colorectal cancer (12.8%) and prostate cancer (11.0%). For females, the most common type of cancer was breast cancer, representing 20.2% of all cancers, followed by colorectal cancer (9.0%) and cervical cancer (6.9%) (IPH Batut, 2016a). In 1996, a population-based Cancer Registry in central Serbia was re-established; before 1996, the epidemiological situation of malignant tumours was monitored only on the basis of mortality data.

SDRs for all ages per 100 000 inhabitants for circulatory diseases decreased from 657.3 in 2000 to 444 in 2015, which was more than two times higher than the EU average of 189 in 2015. Ischaemic heart diseases and cerebrovascular diseases are the leading causes of death in this group of diseases (see Table 1.3). The SDR from malignant neoplasm as the second cause of death has increased and is higher than the EU average (198 versus 160 in 2015). The cancer incidence in Serbia increased from 292.33 per 100 000 inhabitants in 2000 to 492.59 in 2013, which was only slightly lower than the EU average of 556.04. The SDR for breast cancer was higher than the EU average in 2015, with 29.3 per 100 000 inhabitants in Serbia

compared with 21.5 per 100 000 inhabitants in the EU. The SDR from cervical cancer was almost three times higher than the EU average (8.4 per 100 000 inhabitants in Serbia versus 3.0 in the EU). Diabetes is one of the most frequent chronic noncommunicable diseases. The SDR from diabetes (24.7 in 2015) is almost two times higher than in the EU. The SDR from external causes, injury and poisoning decreased from 49.5 per 100 000 inhabitants in 2000 to 33.4 in 2015, with the SDR for suicide and self-inflicted injury decreasing from 17.9 in 2000 to 11.8 in 2015, which was above the EU average of 9.6 (WHO, 2019).

TABLE 1.3 Mortality and health indicators, 1995–2017 (selected years)

LIFE EXPECTANCY (YEARS)	1995	2000	2005	2010	2015	2017
Life expectancy at birth, total	72.0[a]	71.6	72.8	74.3	75.3	76.1
Life expectancy at birth, male	69.6[a]	68.9	70.2	71.8	72.8	73.6
Life expectancy at birth, female	74.6[a]	74.4	75.6	77.0	77.9	78.7
Life expectancy at 65 years, male	–	–	13.5[b]	14.0	14.4	14.5
Life expectancy at 65 years, female	–	–	15.6[b]	16.2	16.8	17.0
MORTALITY (PER 100 000 POPULATION)						
All-cause mortality [c]	–	946	909	948	896	–
Ischaemic coronary disease [c]	–	126.9	139.2	108.6	81.0	–
Cerebrovascular disease [c]	–	183.3	166.5	136.4	100.4	–
Malignant neoplasms [c]	–	189.1	199.4	206.8	198.0	–
Suicide [c]	–	17.9	16.2	13.2	11.8	–
External causes (unintentional accidents) [c]	–	49.5	44.2	38.3	33.4	–
Pneumonia [c]	–	10.44	6.72	5.74	11.63	–
Infant mortality rate (per 1000 live births)	17.80	10.64	8.02	6.73	5.30	5
Maternal mortality rate (per 100 000 live births)	12.98	9.49	13.85	17.57	12.00	–

Note: [a] 1997 data; [b] 2006 data; [c] WHO, 2019

Source: World Bank, 2019a

Regarding maternal mortality, Serbia has experienced a decrease since 2010, from 17.57 in 2010 to 12.0 deaths per 100 000 live births in 2015 (see Table 1.3). Mortality from perinatal deaths per 1 000 births decreased from 15.44 in 1995 to 6.2 in 2015. Neonatal deaths per 1 000 live births decreased from 7.69 in 2000 to 3.7 in 2017 and post-neonatal deaths per 1 000 live births decreased from 2.96 in 2000 to 1.5 in 2015. The infant mortality rate also declined, from 17.8 in 1995 to 5 in 2017 (see Table 1.3), although it was still high in comparison to the EU (3.5) (WHO, 2019). The under-5 mortality rate declined almost three times, from 19.7 per 1 000 live births in 1995 to 5.7 in 2017 (World Bank, 2019a).

1.4.3 *Morbidity*

The incidence of tuberculosis (TB) decreased from 43.1 in 2005 to 21.0 in 2016 (see Table 1.4). Serbia has successfully implemented the Directly Observed Treatment (DOT) strategy supported by WHO, almost halving the incidence rate (WHO, 2018a).

The immunization coverage is compulsory against TB, diphtheria, tetanus, pertussis and polio immunization, hepatitis B, measles, mumps, rubella, Haemophilus influenza type b and pneumococcus (IPH Batut, 2017a). The target coverage rate is 95%, but is not achieved for some diseases. The incidence of measles dropped from 12.18 per 100 000 inhabitants in 1998 to 0 in 2012, but increased since then, reaching 5.37 per 100 000 inhabitants in 2015, due to the refusal of parents to vaccinate their children. The incidence of pertussis remained low throughout this period, at 1.25 per 100 000 inhabitants in 2015 (WHO, 2019).

1.4.4 *Maternal and child health*

In Serbia, abortion is legal and permitted; it is regulated by the Law on Abortion in Health Care Institutions. The rate of abortions per 1000 live births decreased from 573.75 in 2000 to 257.0 in 2015, which is similar to the EU average of 203.0 in 2015 (WHO, 2019).

1.4.5 *Lifestyle factors*

TOBACCO

The percentage of daily smokers decreased from 33% in 2000 to 29.2% in 2013, but this is still an increase from 26.2% in 2006. The percentage of smokers (daily or occasional) remains high, at 34.7% in 2013. Smoking is more frequent among men (37.9%) than women (31.6%) (IPH Batut, 2016b). Only 35.2% of smokers received advice from their GP to quit smoking in 2013 (IPH Batut, 2014b). More than 50% of the population aged over 15 reported exposure to tobacco smoke, and almost half of the non-smoking population (47.1%) reported concern for their health as a consequence of exposure to tobacco in 2013 (IPH Batut, 2016b).

ALCOHOL

Drinking alcoholic beverages is socially accepted, with pure alcohol consumption per capita increasing over time, from 7.4 in 2000 to 9.1 litres in 2014 (see Table 1.4). In 2013, 53.9% of the population in Serbia drank alcohol (occasionally or daily). The largest percentage of those who consumed alcohol were aged 25–34 years (66%); daily consumption of alcohol was reported by 4.7% of the population in 2013, higher than in 2006 (3.4%), with the highest prevalence among the poorest sector of the population. In 2013, men drank six times more frequently than women on a daily basis. Binge drinking, at least once a month, was present both among the general population (16%) and among adolescents (IPH Batut, 2014b).

OBESITY

The prevalence of obesity has increased consistently in the last decade, from 15.5 in 2000 to 21.1% in 2015, still below the average for the WHO European Region (22.9%) and the EU average (22.5%). A considerably higher percentage of overweight persons has been recorded among the poorest sector of the population, the least educated population and those who

live in non-urban settlements. In 2013, obesity rates were higher in women (22.2%) than in men (20.1%), while the opposite applied to being overweight (41.4% in men versus 29.1% in women) (Ministry of Health, 2014).

TABLE 1.4 Morbidity and factors affecting health status, 2000–2016 (selected years)

SELECTED INDICATORS	2000	2005	2010	2014	2015	2016
Incidence of tuberculosis per 100 000 inhabitants	–	43.1	32.0	25.5	23.0	21.0
Incidence of HIV per 100 000 inhabitants	0.9	1.4	2.0	1.8	3.0	2.0
Incidence of cancer per 100 000 inhabitants	294.3	327.5	515.0	495.0	–	–
Incidence of female breast cancer per 100 000 inhabitants	70.3	68.5	1210	101.0	–	–
Incidence of cervix uteri cancer per 100 000 inhabitants	25.9	24.8	36.1	30.7	–	–
Pure alcohol consumption, litres per capita, age 15+	7.4	9.6	9.6	9.1	–	–
Age-standardized prevalence of obesity (BMI≥ 30kg/m^2) in people aged 18 years and over	15.5	17.3	19.2	20.7	21.1	–

Source: WHO, 2019

2

Organization and governance

Summary

- The latest developments of the health system are closely linked to the break-up of Yugoslavia in 1991 and political changes in 2000, after which Serbia was supported by external agencies.
- While the Ministry of Health and related agencies are in charge of the administrative and regulatory functions of the health system, there are some functions devolved to the local level (e.g. cities and municipalities).
- The 2005 Health Care Law and the 2007 Law on Local Self-Governance increased the responsibility of local governments in decision-making and governance in primary care. However, the latest 2019 Health Care Law aims to recentralize the ownership of buildings and equipment.
- The 2019 Health Care Law and 2019 Health Insurance Law foster the concept of the "chosen doctor", which was established by the 2005 Health Care Law to promote a culture of continuous quality improvement at all levels of health care.
- The National Health Insurance Fund, as well as the National Institute of Public Health "Dr Milan Jovanović Batut" and the regional Institutes of Public Health are involved in the annual planning of activities.

- The most relevant document leading the development of the health system is the 2010 Health Care Development Plan, which includes priority areas for the protection and improvement of the health status of the population, while the basic regulation has been recently updated with the 2019 Health Care Law.

- The health system is improving information for patients on their rights and their roles in decision-making processes. Patient choice is linked to the concept of the "chosen doctor" in primary care, who acts as a gatekeeper to other levels of care.

2.1 Historical background

Recent developments in the Serbian health system have been influenced by the break-up of Yugoslavia in 1991 (see section 1.2). Serbia and Montenegro (FR Yugoslavia) were kept under United Nations social and economic sanctions based on the Resolution of UN Security Counsel No. 757. Huge efforts were necessary to preserve the network and capacities of health institutions and the achieved level of health care.

In such circumstances, there were no opportunities to make radical changes in the health system. During this period, as a result of war, sanctions, the economic crisis with hyperinflation, and the international isolation of the country, the structure and resources of the health system were almost completely devastated with drastic consequences for the health and the quality of life of citizens (Bukelic, 1994). In this political, social and economic climate, the Law on Health Care was adopted in 1992. This Law introduced a highly centralized system of financing and management in the health system, with founding rights over all health institutions in Serbia entrusted to the republic level.

With the political changes in October 2000 (that is, the replacement of Milosevic's regime and the new democratic government coming into power), conditions and opportunities for a fundamental re-examination and reform of health policy were developed. In that period, Serbia was supported by extensive international humanitarian aid, donations in the form of technical assistance for the rehabilitation and modernization of health facilities and equipment and capacity-building in all sectors of the health system.

In addition, loans (mainly from the EU through the European Investment Bank (EIB), but also from the World Bank) and donations for the recovery of the health system (also provided by the EU through the European Agency for Reconstruction (EAR)) became available.

The reforms undertaken in this period aimed to increase the accessibility of health services, improve equity in the use of resources, enhance the quality of health services, and increase the efficiency of the system. The reform process also aimed to strengthen primary care and preventive measures versus curative services, in order to decrease the rate of preventable diseases and reduce health expenditure. Reforms also aimed to reconfigure hospitals to more effectively respond to the needs of patients and to develop a new basic package of health services in balance with available resources. Capitation was chosen as an option for primary care and introduced in 2013, and the model of diagnosis-related groups (DRGs) for payments in secondary care was introduced in 2019, after several years of piloting. One of the important goals was also the integration and better oversight over the provision of private health services.

At the same time, the government began the process of adopting major health and multisectoral documents. The policy document Health Care Policy of Serbia was adopted in 2002, followed by the Strategy for the Reform of the Health Care System (with the Action Plan in 2003 as a draft) and several other strategic documents. Also, consolidation in the system of compulsory health insurance and the work of the NHIF was achieved, and costs were reduced by passing a series of regulatory mechanisms for pharmaceuticals and medical devices. In this way, the preconditions were created for a comprehensive change in health policy and the reform of the health system through the adoption of the so-called system of laws (Health Care Law, Health Insurance Law, and Law on Chamber of Medical Workers).

Significant assistance in carrying out reforms was provided by the international community, in particular the World Bank and the European Union through their agencies, but also by a number of countries in the form of bilateral cooperation. As an example, the World Bank had several generations of the Health Project (Serbia). The objective of the Additional Financing for the Health Project for the Republic of Serbia was to build capacity to develop a sustainable, performance-oriented health system, where providers are rewarded for quality and efficiency and health insurance coverage ensures access to affordable and effective care (World Bank, 2003, 2014, 2015a).

During this period, the assistance of the international community took place in several stages: the first was related to emergency humanitarian aid, and measures to improve sanitation and availability of medicines, followed by projects and programmes aimed at restoring health system infrastructure, with the reconstruction of buildings and the purchase of new equipment, and finally support for institutional reforms to strengthen the capacity of the health system to respond effectively to the needs of users.

2.2 Organization

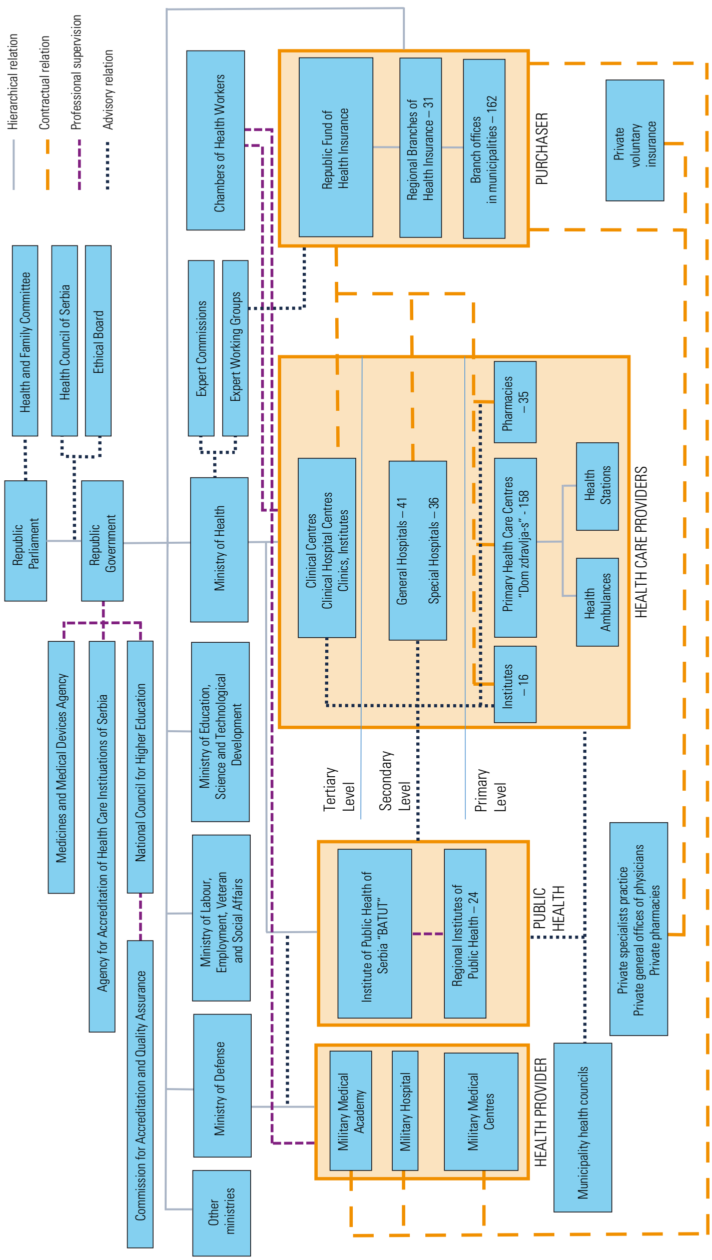
The health system is organized and managed by three institutions: the Ministry of Health, the National Health Insurance Fund, and the Institute for Public Health “Dr Milan Jovanović Batut”. The organizational structure of the health system, based on current legislation – the 2019 Health Care Law (Official Gazette, 2019a), the 2017 Decree on the Plan of the Health Institutions’ Network (Official Gazette RS, 114/2017), the 2019 Statute of the National Health Insurance Fund (Official Gazette 25/2019) and the 2017 Law on Higher Education (Official Gazette, 2017a) – is illustrated in Fig. 2.1.

2.2.1 *Statutory systems framework*

Administrative and regulatory functions of the health system are the responsibility of ministries and state agencies. In addition, some relevant health care functions are entrusted to lower government levels. This means that at a “macro” level, the health system in Serbia is predominantly steered by government institutions, whereas some selected functions are devolved to the level of the 2007 Law on the Territorial Organization of the Republic of Serbia (Official Gazette, 2007a):

- the Autonomous Province of Vojvodina and its six cities and 39 municipalities: the governing bodies are the Province Government of Vojvodina, the Province Secretariat for Health Social Policy and Demography and the Province Health Insurance Fund;
- the City of Belgrade and its 17 municipalities: the governing bodies are the City Council with the Mayor, Deputy Mayor and members, and the City Secretariat for Health Care; and,

FIGURE 2.1 Overview of the health system in Serbia



Note: Besides the network of Institutes of Public Health, health institutions providing health services at multiple levels of health care are: Institute of Blood Transfusion, Institute of Occupational Medicine, Institute of Forensic Medicine, Institute of Virology, Vaccines and Serums, Institute for Antirabies Protection, Institute of Psychophysiological Disorders and Speech Pathology, and Institute of Biocide and Medical Ecology.

Sources: Compiled from the Health Care Law (Official Gazette RS 25/2019), Decree on the Plan of the Health Institutions' Network (Official Gazette RS 114/2017), Statute of the National Health Insurance Fund (Official Gazette RS 25/2019), and Law on Higher Education (Official Gazette RS 88/2017).

- cities, in total 23 (including those in Vojvodina), and 150 municipalities (including those in Vojvodina): the governing bodies are the city and municipality authorities. The recently established municipality health councils (under the 2013 Law on the Patients' Rights) have predominantly advisory roles in public health and patient rights (see section 5.1).

At the "meso" level (facility/institutional level), governance is performed by the Managerial Board of each facility/institution. Also, some governance functions with very weakly defined roles and responsibilities at the institutional level are performed by the Supervisory Board. At the "meso" level, management is performed by a Director and their management team. At the "micro" level, only simple management processes can be observed (planning, organizing, staffing, leading and controlling of everyday performance and delivery of health services). According to survey results among directors of health institutions in Serbia, priority objectives for managers are: improving health care quality, increasing patient satisfaction and professional development, as well as improving employee satisfaction and work organization (Bjegović-Mikanović, 2016).

Publicly owned health institutions comprise a wide network at the primary, secondary and tertiary level and are overseen by the Ministry of Health (Fig. 2.1). As of late 2016, this network comprised 355 health institutions with a total of 104 007 employees in the publicly owned health sector (the 2017 Decree on the Plan of the Health Institutions' Network; IPH Batut, 2017d, p. 64).

Primary care, organized at municipality level, includes: preventive care, emergency care, general medicine, health care for women and children, dental care, occupational medicine, physical medicine and rehabilitation, the health visitor services, as well as laboratory and other diagnostics (for details, see section 5.2). Also, primary care physicians take care of mental health as the first point of access. If necessary, they can refer those patients to secondary and tertiary clinics. Health care at the primary level is provided by 158 state-owned primary care centres (called *Dom zdravlja* in the singular), with a well-developed network of outpatient facilities and offices, covering the territory of one or more municipalities or towns, in accordance with the Decree on the Plan of the Health Institutions' Network. Apart from primary care centres, primary level services are provided by 16 institutes rendering primary health services to specific groups, such as students or

skin and venereal disease patients. Primary care is performed by a "chosen doctor" who is either a general practitioner (GP) or a specialist in general medicine, occupational medicine, paediatrics, gynaecology or dentistry (the 2019 Health Care Law and the 2019 Health Insurance Law) (see section 5.3). The entire primary care network is now equipped with Internet, computers, printers, bar-code readers and card readers (Serbia Health Project – Additional Financing) (DILS, 2011; Milenkovic et al., 2012).

Secondary and tertiary health services, organized at the regional and national level, are provided by hospitals as the continuation of diagnostics, treatment and rehabilitation initiated at the primary level, or when specialized care is required (for details see section 5.3). There are 41 general hospitals, 36 special hospitals for acute and chronic conditions and rehabilitation, 16 institutes, four clinical–hospital centres, four clinical centres and 25 Institutes of Public Health (different from the primary health care institutions, Institutes of Public Health offer public health services, though vaccinations and counselling belong to health care services).

2.2.2 *Actors in the health system*

The main actors responsible for the planning, regulation, organization and financing of the health system in Serbia are the Ministry of Health and the NHIF. However, there are other ministries with certain roles, as well as state agencies at national level.

At the level of the parliament (the National Assembly), there is a **Health and Family Committee**, which has an advisory role. The Health and Family Committee may organize public hearings for the purpose of obtaining information, or professional opinions on proposed legal acts, which are in the parliamentary procedure, clarification of certain provisions from an existing or proposed act, clarification of issues of importance for preparing the proposals of acts or other issues within the competences of the committee, as well as for the purpose of monitoring the implementation and application of legislation; that is, the realization of the oversight function of the National Assembly. The procedure for organizing public hearings is regulated by the National Assembly Rules of Procedure.

The Ministry of Health is the central authority and has operational units for health service organization, health insurance, public health and programmed health care, European integration and international cooperation,

pharmaceuticals and medical devices, controlled psychoactive substances and precursors, inspection operations, biomedicine and the internal audit group (Ministry of Health, 2018). Its mandate is regulated by the 2017 Law on Ministries and the 2019 Health Care Law. It is the major decision-maker in the Serbian health system, responsible for determining health policy, planning and oversight, passing health care standards, determining quality control mechanisms, controlling the quality of health care, and developing and implementing public health programmes and investments.

The Ministry of Health is also in charge of health insurance, safeguarding and improving population health, health inspection and supervision of health services. The Ministry of Health has primary responsibility for health system governance, but there are overlaps with other institutions and agencies, such as AZUS (Agency for Accreditation of Health Care Institutions in Serbia) that is responsible for the quality of health care and accreditation, and ALIMS (Medicines and Medical Devices Agency of Serbia), responsible for pharmaceuticals (see below). The Ministry of Health has a total of 270 employees (out of 302 job posts) (as of September 2018), organized into six sectors, including sectors for Organization of Health Services; Health Insurance; Public Health and Programmatic Health Care; Drugs and Medical Materials and Devices; Inspection; and a Ministry of Health Secretariat. Of these employees, more than half are working on inspections.

The Ministry of Health has advisory support by the Health Council, the Ethics Board and different national professional commissions in particular fields of medicine and health care, harmonizing opinions of stakeholders and suggesting proposals for development of clinical guidelines.

The Health Council serves as the core advisory body to the Ministry of Health for long-term strategy and planning. The 15 members of the Health Council are appointed by the National Assembly, based on nominations by the government and relevant institutions (faculties of medicine, pharmacies, dentistry, chambers of health workers and the NHIF). Its mandate includes monitoring of the health system and health insurance, alignment with EU and international standards, suggesting measures for improvement of health care and health protection, and evaluating and accrediting programmes of continuing medical and public health education. The administration of the Council is provided by the Ministry of Health (2019 Health Care Law – Articles 135–140).

The 2004 Law on Medicines and Medical Devices and the Health Care Law have provided since 2005 opportunities for establishing two national agencies with particular roles in the health system: Medicines and Medical Devices Agency (ALIMS) and the Agency for Accreditation of Health Care Institutions (AZUS).

The Medicines and Medical Devices Agency (ALIMS) was founded in 2004. The mission strives for the accomplishment of the basic human right of accessibility to quality, efficacious and safe medicines and medical devices, as well as to promote and enhance public and animal health through: issuing marketing authorizations of solely quality, safe and efficacious medicines and medical devices, providing adequate information in order to ensure safe and rational use of such medicines and medical devices, and quality control of medicines and medical devices which is in full compliance with national and international laws and standards. ALIMS has responsibility for monitoring medicines and medical devices in both the public and private sector, including licensing and approval of new medicines and devices. In 2016, ALIMS had 173 employees (ALIMS, 2018).

The Agency for Accreditation of Health Care Institutions (AZUS) was founded in 2008 with EU financial and professional support. Its role is to perform professional, regulatory and development activities in the process of accreditation of health care institutions. The main source of funding for AZUS is the national budget and payment from health institutions undergoing the process of accreditation. Since 2010, the Ministry of Health has transferred the governance of the Republican Scientific Committee for Clinical Guidelines development and implementation to AZUS. Since 2012, the AZUS is the Regional Health Development Centre for the South-eastern Europe Health Network. Nowadays, the accreditation process remains an optional choice for health care providers, and the AZUS has only a limited core budget and staff (in total 11 job posts) to carry out its responsibilities (AZUS, 2018).

Besides the Ministry of Health, other ministries have certain roles directly and indirectly related to the health system.

The Ministry of Finance oversees approving the budget of the Ministry of Health and the NHIF, and has other roles related to financial flows, including approval of the budget for all strategic and operational health policies before their adoption.

The Ministry of Education, Science and Technological Development is responsible for all matters related to the education of human resources for health and scientific research in the field of medicine, health care and public health. Also, this Ministry has the responsibility for ownership of higher education institutions, their financing, enrolment policies and the national accreditation both of educational and research entities and academic programmes aimed to the production and development of five recognized health care professions: physicians, nurses, dentists, pharmacists and biochemists. The National Council for Higher Education is responsible for securing the development and the improvement of the quality of higher education through its Commission for Accreditation and Quality Assurance (CAQA). CAQA was formed in 2006 by the 2005 Law on Higher Education as an independent body of the National Council for Higher Education. It is the only formally recognized body responsible for the external quality assurance for higher education in Serbia which follows the Bologna Process. CAQA obtains funding by accreditation fees, while the Ministry responsible for education provides technical and administrative support. CAQA has operational and decision-making independence from all stakeholders (e.g. ministry in charge of education as well as other ministries, National Council for Higher Education, higher education institutions).

The Ministry of Defence holds ownership and a governance function over health care services provided for military personnel and pensioners. Also, this Ministry is responsible for the Military Medical Academy, which provides health care at tertiary level, education and research in the field of medicine, as well as primary and secondary level of care for military personnel.

The Ministry of Labour, Employment, Veteran and Social Affairs is in charge of health and safety at work. The Labour Inspectorate within this Ministry performs inspections of work conditions in the field of labour, labour relations and safety, and health at work, as well as the inspection of fatal, serious and collective injuries at work. In collaboration with the Ministry of Health, this Ministry oversees health services provided in pensioners' homes (nursing homes for older people) and homes for people living with disabilities. Also, institutions of social care collaborate with health care institutions in the provision of help for homeless people and the recognition and prevention of domestic violence.

Other ministries performing certain important executive functions and programmes related to public health and vulnerable populations

are: the Ministry of the Interior (health in prisons and organization of rapid response to emergency situations), the Ministry of Environmental Protection, the Ministry of Agriculture, Forestry and Water Management, the Ministry of Youth and Sport, the Ministry of Public Administration and Local Self-Government, and the Minister without portfolio responsible for demography and population policy (who now oversees the implementation of the Sustainable Development Goals). In the light of the EU accession process, the Ministry of European Integration has the important role of communicating progress related to consumer and health protection to the European Commission, the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, negotiating Chapter 28 of the Stabilisation and Association Agreement (SAA) between Serbia and the EU, which entered into force in September 2013 and was implemented in 2014 (European Commission, 2016). Chapter 28 relates to EU rules, which protect consumers in relation to product safety, dangerous imitations and liability for defective products. The EU also ensures high common standards for tobacco control, blood, tissues, cells and organs, patients' rights in cross-border health care, and serious cross-border health threats including communicable diseases, as well as medicines for human and veterinary use (European Commission, 2018).

The government established the Social Inclusion and Poverty Reduction Unit (SIPRU) in 2009, mandated to strengthen government capacities to develop and implement social inclusion policies based on good practices in Europe. The social inclusion programmes include various cash benefits (pensions, unemployment benefits, social assistance, etc.) and services (for older people, children, families, persons with disabilities, etc.).

At the institutional level, the most important actors in the health system are the National Health Insurance Fund and the Institute of Public Health of Serbia "Dr Milan Jovanović Batut".

The National Health Insurance Fund (NHIF) is a national, public and non-profit organization through which Serbian citizens exercise their health insurance rights (NHIF, 2018a). The activities of the NHIF are conducted in its organizational units: Directorate of the Institute, Provincial Health Insurance Fund, regional branches of the NHIF (in total 31, out of which five at the territory of Kosovo and Metohija) and sub-branch offices in municipalities (137 in total, according to the latest Statute of the National Health Insurance Fund). The National Health Insurance Fund is the main purchaser of health services responsible for: finances necessary

for the functioning of health care at all levels; contracting the provision of services with public institutions and the private sector; controlling the implementation of commitments undertaken when contracting, and defining the basic package of health services (see section 3.3.1).

Entering into contracts with the facilities not included in the Network Plan is subject to review by the Institute of Public Health of Serbia "Dr Milan Jovanović Batut", while the approval for entering into contacts is granted by the Ministry of Health. Each year, the NHIF adopts the actual health care plan under compulsory health insurance as a strategic and operational document in the implementation of compulsory health insurance policy.

The NHIF is under the oversight of the Ministry of Health. Besides the responsibility for pooling and purchasing, as the only insurer for mandatory health insurance, it has some responsibilities for financial oversight of health institutions financed by the NHIF. The NHIF consists of: the Board of Directors, the Supervising Board and the Director. As of the end of 2016, the NHIF, including all regional branches and branch offices, had 2 059 employees taking care of 7 027 150 insured people (equivalent to 3 413 insurees per employee) (NHIF, 2017c).

The Institute of Public Health of Serbia "Dr Milan Jovanović Batut" (IPH Batut), and the 25 regional Institutes of Public Health (IPHs), have a wide range of activities and mandates, including for health system planning, and monitoring (see section 5.1). The IPH Batut is organized into seven departments with 194 staff, including: the Centre for Prevention and Control of Diseases; the Centre for Health Promotion; the Centre for Hygiene and Human Ecology; the Centre for Informatics and Biostatistics; the Centre for Microbiology; the Centre for Analysis, Planning, and Health Care Organization; and the Service for Legal, Administrative and Technical Support. The IPH Batut receives core funding from the state budget, from the NHIF for providing specific services, as well as project financing (in the case of IPH Batut, the NHIF accounts for 30% of funding, 30% is from the state budget and 30% from project and self-financing). The 25 regional IPHs are largely independent of IPH Batut and receive a substantial portion of their funding from the NHIF for providing specific services, such as health status assessment, environmental and other laboratory services. According to the 2019 Health Care Law and the 2016 Public Health Law, IPH Batut coordinates and monitors the professional work of all IPHs and other participants in public health activities in Serbia. IPH Batut's main

areas of activity are: analysis, planning and organization of health care, developing health information systems, health promotion, disease control and prevention, hygiene and human ecology, and microbiology.

2.2.3 *The private sector*

National legislation has allowed private health care services to operate since 2005, but their operation is poorly regulated. Private health care services are covered by OOP payments, as additional private health insurance is largely lacking (see section 3.5). This leads to a power imbalance, where private health care providers are negotiating prices directly with individual users (patients), instead of institutions with more leverage. Provision of private health care services is still limited but increasing, especially as regards dental services and diagnostics. Also, private health care providers employ medical professionals from the public sector who work on a temporary, consultancy basis. In 2016 the private sector included 2 650 institutions: 2 205 outpatient medical offices and clinics, including 1 387 dental offices. Also, there are 252 pharmacies, 144 diagnostic offices and laboratories and 41 private hospitals providing secondary level health services (IPH Batut, 2017a). However, the volume of services provided by the private sector remains small, and rarely surpasses 5% of services provided by the public sector because facilities are much smaller.

2.2.4 *Professional associations and trade unions*

Since 2005, after the adoption of the 2005 Law on Chambers of Health Workers, five chambers have been founded to improve the conditions for the practice of the five regulated professions of medical doctors; doctors of dentistry; graduate pharmacists; graduates of medical biochemistry and medical doctors specializing in clinical biochemistry; and nurses and health technicians. Codes of professional ethics of chambers stipulate that health workers have the right and duty, through their professional and other organizations, to advocate for proper evaluation of their work, as well as to insure, personally or through an employer, against claims for damages in the performance of their professional duties. Chambers are responsible for licensing and re-licensing of health workers.

Besides chambers, health professionals in Serbia have numerous other associations such as the Serbian Medical Society serving to improve the roles and status of the profession. Also, they have trade unions, such as the Trade Union of Employees in Health and Social Care of Serbia and the New Health Union of Serbia, that represents health workers asking for solidarity, unity and struggle for the authentic interests of employees in health, social and pharmaceutical services.

Recently, since 2014, private health care providers have organized their Association of Serbian Private Health Care Providers, gathered around the mission of mainstreaming privately owned health services and improving their integration into the health system.

2.2.5 *Other associations*

During recent years, nongovernmental organizations (NGOs) have become more important as partners of the Ministry of Health in delivering public health programmes aiming to prevent diseases or improving the health of vulnerable groups (e.g. the Roma population, people living with disabilities or with particular diseases such as diabetes or AIDS). In order to improve the quality of health care, since 2012, the NHIF takes into account the views and suggestions of patients, their associations and representatives (see section 2.8). In order to ensure cooperation with patients' associations and enable them to be fully involved in making decisions regarding the exercise of the right to health care within compulsory health insurance, the NHIF has established a Centre for Cooperation with Insured Persons, Patients' Associations, Persons with Disabilities and Public Information. Associations and their representatives can be involved in the work of the NHIF by providing their questions, suggestions and advice in written form. As of 2017, the NHIF has established collaboration with 19 patients' association (NHIF, 2018a).

2.3 **Decentralization and centralization**

The dominating factor in recent Serbian policy reforms, introduced by health legislation in 2005 (the 2005 Health Care Law) (see section 6.1), was the development of decentralization. With regard to health policies,

decentralization implied that the primary health centres become the responsibility of local governments. The local government became obliged to prepare a local health care plan and to formulate specific programmes tailored to the needs of the local population; it also became responsible for governing the primary health centres (see section 5.2). However, the lack of financial resources and the economic crisis has slowed down these processes, therefore decentralization remains predominantly in the phase of devolution, without financial responsibility at the local level.

The Ministry of Health has retained ownership of hospitals, with hospital directors and managing boards appointed by the government/Ministry of Health. Primary care centres were decentralized to local governments by the 2005 Health Care Law, and local governments are responsible for appointing directors and have formal responsibility for the performance of the primary care centre. However, governance at the level of municipalities has been predominantly confined to the appointment of the directors, deputy director, the members of the management board (board of directors), and the supervisory boards of health care institutions. Execution of financial functions at the municipality level could be seen within some municipalities in their annual programme budget planning, which engages resources mainly to meet infrastructure needs/capital investment in primary care at the local level. As well as the adopted 2007 Law on Local Self-Governance, which provides decision space for local authorities to exercise more responsibility in governance at the local level, some internationally funded projects have aimed to increase the capacity of institutional actors and beneficiaries in order to improve access to and efficiency, equity and quality of local delivery of health, education and social protection services, in a decentralizing environment:

- the EU-funded programme implemented by the Council of Europe – the 2009–2012 Support to Local Self-government in Decentralization project (managed by SCTM) (Council of Europe, 2009); and
- the 2015 on the Delivery of Improved Local Services (DILS) project, managed by the Project Implementation Unit (PIU) of ministries with jurisdiction for health, education, labour and social policies (World Bank, 2015a).

Both projects are still ongoing with the leadership of SCTM and with the participation of cities and municipalities. For example, the capacity-building

programme is now being implemented for the development of local public health strategies.

Several factors contributed to the devolvement of governance at the central level, which does not progress towards full decentralization. At first, Serbia is still in a deep economic crisis, inherited from the past and aggravated by the world economic crisis. The poor performance of the economy has a deep negative impact on the social sectors, including the health sector. Political involvement at almost all administrative levels has also affected in a negative way the proper governance and management of the health system. It induced frequent changes in the management structures (especially top managers), affecting the continuity of governance and strategic thinking at the "macro" and "meso" levels.

In consequence, those health care facilities that are state funded are still financed in accordance with the 2006–2018 Decree on the Plan of the Health Institutions' Network (Official Gazette, 2006b) adopted by the state government and not by local self-governance. The Ministry of Health is continuously investing efforts in improving quality of care at the local level with various strategies and guidelines, such as the guidelines for good clinical practice in many areas of health care. Since 2010, the system for monitoring health care indicators has been significantly improved, which allows better insight into the work of health services (adoption of the 2010 Rulebook on Health Care Quality Indicators) (Official Gazette, 2010d).

With the new 2019 Health Care Law, a process of centralization was introduced, transferring ownership of buildings and equipment to the national/republic level. However, an important player at macro level will continue to be Vojvodina Province, with its Secretariat for Health Social Policy and Demography, as reported by the 2019 Health Care Law. Social responsibility for health at the level of an autonomous province, a municipality or city includes measures for the provision and implementation of health care according to the interest of the citizens in the territory as regulated by the 2019 Health Care Law (Articles 8–15):

- Monitoring of the health status of the population and the operation of the health service in their respective territories, as well as looking after the implementation of the established priorities in health care.
- Creating conditions for accessibility and equal use of primary care in their respective territories.

- Coordinating, encouraging, organizing and directing the implementation of health care, which is exercised by the activities of the local self-government units, citizens, enterprises, social, educational, and other facilities and other organizations.
- Planning and implementation of own programmes for the preservation and protection of health from a polluted environment.
- Providing the funds for performance of the primary health care institutions in their respective territories in compliance with the 2019 Health Care Law and with the 2006–2018 Decree on the Plan of the Health Institutions' Network, which includes construction, maintenance, and equipping of health care facilities.
- Cooperation with humanitarian and professional organizations, unions and associations, in the affairs of health development.

2.4 Planning

The government and the Ministry of Health are responsible for the strategic planning in the health sector in cooperation with other ministries, particularly the Ministry of Finance and the Ministry of Public Administration and Local Self-Government. The Health Council has an advisory role, together with the parliamentarian Health and Family Committee (see section 2.2). Strategic planning continues to take advantage of the health policy document "Health Policy of Serbia" adopted by the government in 2002 (Ministry of Health, 2003). After the democratic changes in Serbia in 2000 (see section 2.1), this document was the result of the need to define primary goals and directions of health care development: it was the outcome of an expert-led consultative process. General goals of the policy have a focus on population health, equitable access to health services (especially for vulnerable populations), a patient-centred health system, selective decentralization in the field of resources management, continuous quality improvement, a better definition of the role of private sector and strengthening of human resources for health.

Following the health policy at national level, over the past years, numerous strategies, plans and programmes have started in Serbia to ensure the implementation of activities and the overall sustainable development of the health system. Strategies and plans are usually endorsed by the government, except the 2010 Plan for Development of Health Care in the Republic

of Serbia, which was passed by decision of the parliament in 2010 (Official Gazette, 2010c). This Plan is based on analyses of population health, the assessment of health care needs, and available human, financial and other recourses. This Plan has two priority areas accompanied with objectives and planned activities: 1) preserving and improving the health of the population; and 2) the organization and functioning of health care. In order to implement the Plan, the Serbian Government passed national programmes for health care, such as programmes of immunization, programmes for rare diseases and programmes for the prevention of type 2 diabetes. In addition, an autonomous province, a municipality or a city can implement some special programmes in the area of health care, which are not passed or implemented at national level, for specific population groups or illnesses specific for the local level (Provincial Secretariat for Health Care, 2018).

At the national level, the Ministry of Health and the government have responsibilities for planning human resources and infrastructure. This function is subject to health legislation, such as the Decree on the Plan of the Health Institutions' Network (Official Gazette, 2006b). This Plan specifies the number, structure, capacities and spatial distribution of health care facilities and their organizational units by levels of health care, the organization of emergency care, as well as other issues of importance for the organization of health services in the country. Besides the adopted 2007 Law on Local Self-Governance, which provides for decision and planning space for local authorities to exercise more responsibility in governance at the local level, decision and planning capacity at the local level stays limited. Only some municipalities have used the opportunity to develop local public health strategies, while municipal planning at the operational level (annual planning) occasionally includes capital investments for primary care.

The NHIF and IPH Batut with its network of regional IPHs have an important role in strategic and operational planning through contributing to the working groups of the Ministry of Health with health needs assessments, making proposals of national priorities and establishing consensus through public hearings and debates. Also, the NHIF has an important role in annual operational planning by formulating and adopting each year a plan of health care covered by mandatory health insurance (NHIF, 2017a). The main objectives of health care and the type and volume of health care services covered by mandatory health insurance should be based on an assessment of health needs and priorities, and be in line with the objectives of health

policies. However, this annual plan is still mainly based on inputs. The IPH Batut and the network of regional IPHs are supporting the process of annual planning by providing the situation analysis as the first step in the process of planning.

Since 2008, with the introduction of the Agency for Accreditation of Health Care Institutions of Serbia, health institutions have been submitting institutional strategic plans as part of the accreditation process. An institutional strategic plan encompasses the organization's mission, vision, objectives and action plans aimed at achieving these objectives. In addition, following the 2009 Law on Emergency Situations (Official Gazette, 2009c), health institutions have been passing plans on emergency responses as preparedness measures for all types of hazards.

During the last decade, many multisectoral and sectoral strategies have been developed. International partners, especially the European Union and the World Bank Group, have frequently supported the process of developing strategic plans, to support the management and coordination of health-related international development assistance. However, the coexistence of a number of strategies creates potential overlap that can lead to conflicting objectives and measures, as well as missing objectives. As an example, improving health care quality and patient safety form an important strand of this strategic approach, reflected in the 2009 Strategy for Continuous Improvement of Health Care Quality and Patient Safety (Official Gazette, 2009d). However, the existing 2009 strategy does not mention corruption once, which is likely to be a major factor. In this respect, the framework for health planning needs to link to the anti-corruption theme of the justice sector. More attention should also be applied to the efficiency of health expenditure (CEVES, 2016). Support to the health sector is likely to be on *acquis*-related issues or provided indirectly; for example, through social inclusion measures (European Commission, 2014).

Based on the 2016 Public Health Law, each IPH in cooperation with other actors (health and social care institutions, other governmental and nongovernmental organizations – public or private) proposes programmes in the public health area to the local self-government. Local self-government units finance activities which the IPH implements and coordinates individually, or in cooperation with other actors at the local level. Activities include: preparing the city/municipality public health plan, improving the quality of health care, conducting epidemiological surveillance, early detection and disease control, and other areas of public health.

Although comprehensive planning for cross-border mobility of patients and health workers does still not exist in Serbia, there are programmes and projects for bilateral or multilateral mobility. Some examples are: the Cross-Border Cooperation Programme Croatia–Serbia 2014–2020 (https://razvoj.gov.hr/UserDocsImages/Arhiva/Vijesti/HR-RS%202014-2020_Draft_Cooperation_programme.pdf), the 2016–2020 Cross-Border Cooperation Programme between Serbia and North Macedonia (http://www.kt.gov.rs/en/news/news-archive/a-new-program-of-2016-2020-cross-border-cooperation-between-serbia-macedonia-adopted/), and the WHO project on strengthening collaboration to improve cross-border health opportunities.

2.4.1 *Stated objectives of the health system*

The 2006 Constitution of the Republic of Serbia (Official Gazette, 2006a) sets out the right to health care in Article 68, which stipulates:

- The right to protection of everyone's mental and physical health.
- The provision of publicly funded health care for children, pregnant women, mothers on maternity leave, single parents with children under 7 years of age and older people, unless this care is provided in some other manner in accordance with the law.
- The regulation of health insurance, health care and and health care funds according to the law.

In 2002, the Serbian Government started reforming the health system (see section 6.1). It was set as a national priority and developed within a context of European integration and public sector reform (assistance in the reform process was provided by the EU and the World Bank).

The main objectives of the health system reforms in general were to increase the accessibility of health services to the population, to improve the equity in the use of existing financial resources, and to improve the quality of health care and the efficiency of the overall system (World Bank, 2009). In 2002, the government adopted a National Health Policy, based on the principle that the health of the people is of general public interest and the most important resource for the development of a country. The document

positions health high on the list of priorities, recognizes the link between health and all sectors of society and considers undertaking specific activities in this direction by applying a health promotion approach. Health policy arises and relies on the overall socioeconomic policy and has the following seven national goals (Ministry of Health, 2003):

- Protection and improvement of the health status of the population and strengthening the health potential of the nation.
- Equitable and equal access to health care for all citizens of Serbia, for the same needs, as well as improving the health care of vulnerable population groups.
- Placing users (patients) at the centre of the health system.
- Health system sustainability, with transparency and selective decentralization in the field of resource management, and the dissemination of sources and ways of financing.
- Improving the functioning, efficacy and quality of the health system, through defining specific national programmes in the field of human resources, the network of institutions, technology and medical supplies.
- Defining the role of the private sector in providing health services to the population.
- Improvement of the health personnel database (human resources for health).

The emergence of international partners has imposed the need to formulate a clear vision for the development of the health system. The Ministry of Health, in its 2003 publication Better Health for All in the Third Millennium, presented a strategy for the reform process in the health system until 2015 together with an Action Plan, and a Vision of the Health System in Serbia, which has nine leading principles and was formulated with the participation of all stakeholders in the health system (Ministry of Health, 2003). According to the vision the health sector relies on several premises:

- The future health system in Serbia will evolve from existing capacities and inherited tradition (that is, destroyed basic capital – buildings and equipment, lack of drugs and medical supplies, poor quality of health services, informal payments and corruption).

- The principle of solidarity will be the most important for decision-making and choice of diagnostic and treatment options, and must be continuously respected at all levels.
- In order to ensure the best possible health care, development in upcoming years should consider the financial constraints conditioned by the available funds of the country.
- The joint action of the public and private sector in the provision of health services will provide the population with a health system in which equal access to the basic package of health services is ensured across the population through effective organization and in accordance with available resources.

At the end of 2005, the legislation supporting the reform was completed by adopting three laws: the 2005 Health Care Law (Official Gazette, 2005a); the 2005 Health Insurance Law (Official Gazette, 2005b); and the 2005 Chambers of Physicians Law (Official Gazette, 2005c). In 2019, the new Health Care Law and Health Insurance Law introduced some changes (Official Gazette, 2019a, 2019b) (see Chapters 5 and 6).

Probably, the most important document for the development of the health system in the country is the 2010 Health Care Development Plan of Serbia (Official Gazette, 2010a), which directed the development of the health system for the period 2010–2015. This Plan still constitutes an instrument for the implementation of changes with defined goals and directions for the development of health care. Priority fields for the protection and improvement of the health status of the population are: prevention and control of noncommunicable diseases, prevention and control of infectious diseases and health care for vulnerable groups, while priority fields of organization and functioning of health care include integrated care, human resources for health, integrated health information systems, quality of care, and patient safety and financing. The implementation of the Plan has not been officially evaluated and it is therefore difficult to assess whether its goals have been met.

2.5 Intersectorality

Since 2002, numerous multisectoral strategies have been adopted, with implications for the development of the health system, in particular the quality of health care and the prevention of noncommunicable diseases,

as well as sector-specific strategic documents that directly determine the development of the health system.

The most relevant intersectoral strategies include: the 2003 Poverty Reduction Strategy of the Republic of Serbia, the 2004 National Action Plan for Children, the 2006 National Strategy on Ageing, the 2007 Tobacco Control Strategy, the 2018 Birth Promotion Strategy, the 2015–2025 National Youth Strategy, the 2009 Strategy for the Prevention and Protection of Children against Violence, the 2009 National Strategy for Improving the Position of Women and Promoting Gender Equality, the 2014 Action Plan for Roma Health within the framework of the Strategy for the Promotion of the Status of Roma, the 2009–2012 Occupational Safety and Health Strategy in the Republic of Serbia, the 2013–2017 Strategy on Safety and Health at Work in the Republic of Serbia, the 2014–2021 Strategy for the Drug Abuse Prevention, and the 2009 National Strategy for Palliative Care.

All seven public health priorities in Serbia, according to the new 2016–2025 Public Health Strategy (see section 5.1), are aimed at achieving intersectoral cooperation (Official Gazette, 2018). These are:

- Improving health and reducing health inequalities.
- Improving the environment and working conditions.
- Preventing and combating major diseases and health risks for the population.
- Developing actions to promote health in the community.
- Support for the development of accessible, high-quality and efficient health care.
- Developing the system of public health based on evidence from research.
- Improving leadership, communication and partnership for the implementation of the approach "Health in All Policies".

Temporary working groups consisting of representatives from different sectors support the development of intersectoral documents. In addition to policy documents, several legal acts highlight intersectorality and follow the initiative of the Ministry of Health to implement intersectoral collaboration. As an example, the 2011 Law on Social Protection regulates the establishment of joint social–health care institutions and social health care organizational units for beneficiaries who need both social care and permanent health care (such as homes for people living with disabilities or

homes for women exposed to family violence). The 2009 Law on Food Safety is a result of intersectoral actions of agriculture, environmental protection, health and economic sectors. In 2013, to speed up interventions based on the "Health in All Policies" approach (WHO, 2013), following the initiative of the Ministry of Health, the government established an intersectoral body for the coordination of activities. In 2016, the parliament passed the 2016 Public Health Law, which emphasizes an intersectoral approach. Following this Law, the government established the National Public Health Council, composed of representatives from relevant ministries, Institutes of Public Health, local authorities, nongovernmental associations and private institutions, to advance cooperation among different sectors, organizations, key actors and participants in the public health system. So far, there has been no overall impact assessment of intersectoral work, although the IPH Batut performs surveys on specific challenges, such as the intersectoral response for the prevention of drug abuse and violence.

The most recent and prominent example of intersectoral cooperation is on the prevention of violence against children. Violence against children contributes to a significant burden of disease and injury in Serbia. The Years of Life Lost (YLL) rate due to self-harm and interpersonal violence as causes of premature mortality among boys aged 0–19 are at sixth place among all causes, and the seventh for girls of the same age (IHME, 2016). Among children aged 0–19 years, YLLs point to conditions which are preventable and the subject of cost-effective, intersectoral public health interventions. Prevention of violence against children and its public health consequences belongs (as an operational objective) to the first priority of the new 2018 Public Health Strategy in Serbia (Goal 1: Improving health and reducing health inequalities). Two important events have boosted the activities for the protection of children from violence in Serbia and highlighted the need for strengthening policy. Firstly, under the initiative of the Committee on the Rights of the Child, the United Nations published a global study on violence against children in 2006 (https://www.unicef.org/violencestudy/reports/SG_violencestudy_en.pdf). Secondly, the regional project Protection of Children from Violence in South East Europe (EU-UNICEF initiative) is currently being conducted in four countries (Albania, Bosnia and Herzegovina, Serbia and Turkey) with the objective of strengthening the system of recognizing and monitoring violence against children, and to fight against it through efficient partnership between civil society and decision-makers at the state level (http://europa.eu/rapid/press-release_IP-11-822_en.htm). Many legal

documents have been developed so far based on the international Convention on the Rights of the Child (UN, 1990) and the 2006 Constitution. The 2004 National Action Plan for Children, a strategic document which the government adopted in February 2004, defines the country's general policy towards children for the period until 2015. One of the specific objectives of this plan was the establishment of an effective, operational, multisectoral network for the protection of children from abuse, neglect, exploitation and violence. To realize this goal, the General Protocol for the Protection of Children from Abuse and Neglect has been created (Government of Serbia, 2005), which the government adopted in August 2005. In accordance with the 2004 National Action Plan for Children, the General Protocol contributes to strengthening the reporting and registration of all forms of child abuse and neglect. The General Protocol envisions the development and expansion of the network composed from multidisciplinary teams for the protection of children in the local community, and the implementation of a unified model of prevention at the municipal level throughout Serbia. All reports of suspected child abuse and neglect should be directed to the Centres for Social Work (SCW) that need to organize the service for the rapid assessment or triage of received reports, indicating suspected child abuse and neglect and initiating the relevant interventions of the police, emergency and hospitals, and the public prosecutor. Following adoption of the General Protocol, relevant ministries joined in the adoption of specific protocols for: social care institutions (2006), police (2006, amended in 2012), the educational system (2007), the health system (2009) and the judiciary (2009). Special Protocols are governed by internal procedures within the system and individual institutions (e.g. hospitals, schools, etc.).

An increasing number of NGOs are actively involved in intersectoral cooperation. They have the potential to become significant partners in these activities.

Other examples of a successful intersectoral approach are transport policies, including road safety. During the last decade, several measures have been taken to improve traffic safety (Jovic et al., 2018). The 2009 Law on Traffic Safety on Roads (Official Gazette, 2009k), in addition to already existing measures (seat belts for drivers and passengers), implemented major changes such as: introduction of negative points, prohibition of use of mobile phones and other communication devices by drivers and pedestrians while crossing the street, the permitted alcohol level in blood was reduced to 0.03 g/dl, and the maximum speed in populated areas to 50 km/h. Also,

in 2015, Serbia began implementing EU directives and recommendations on Road Infrastructure Safety Management (see EU Directive at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0096). This includes establishing and implementing procedures of road safety impact assessments, road safety audits, the management of road network safety, and safety inspections (Jovic-Vranes et al., 2018).

2.6 Health information systems

The health information system is regulated by law. The most important ones are the 2019 Health Care Law and the 2014 Law on Health Records and Reporting in the Field of Health, supported by other bylaws (see section 6.1.4). The system of health reporting serves the monitoring and analysis of the health status of the population, the planning and programming of health care, the monitoring and evaluation of the implementation of health care plans and programmes, statistical and scientific research and other needs.

All actors in the public system are obliged to report regularly to the Institutes of Public Health (IPHs) on their activities related to public health and health care services at primary, secondary and tertiary level. IPH Batut is responsible for the collection of data on population health, the work of health institutions (that is, classical indicators related to health services such as vaccination rates, outpatient and inpatient visits, average length of stay in hospital (ALOS), indicators of health care quality, cancer screening coverage, etc.), the analysis of collected health indicators, templates of measures to improve public health (for example, in health promotion: the number of mass-media campaigns per regional IPH or health education interventions, or in the field of environmental health: the number of tests performed to detect air pollution, or number and type of tests to detect safety of drinking-water per water source, etc.), and for proposing an annual workplan for the development of health and coordination of the Health Information System. IPHs are obliged to submit reports to IPH Batut on population health, morbidity and mortality (including data for registries of specific priority diseases), quality of health care and health care financing. This reporting includes information on all their activities in the area of public health, as well as on activities of other participants in the public system. IPHs in the province of Vojvodina also submit their reports to IPH Batut, which draws up and submits reports on population health to the Ministry

of Health (once a year, but in the case of epidemics it could be several times per day). This information serves as the foundation for planning health policy. Similarly, based on data gathered, IPHs prepare reports on the health condition of the population on their territory. All reports are available to the public on the Institute's website (http://www.batut.org.rs/index.php?lang=1). IPHs cooperate and exchange information about the health of the population with local self-government units on the territory for which they have been established. Based on individual reports from health institutions submitted to the regional IPHs, IPH Batut holds registries of diseases with particular public health significance (in total 17 diseases and conditions, including regular publishing of reports on diabetes, cancer and acute coronary syndrome) (Official Gazette, 2016b; IPH Batut, 2018).

In addition to IPH Batut, important players within the health information system in Serbia are the NHIF, which holds a financial database, and the Statistical Office of the Republic of Serbia (SORS), which holds databases on sociodemography and mortality. IPH Batut and SORS are responsible for reporting to WHO, OECD, Eurostat, ECDC and the European Monitoring Centre for Drugs and Drug Addiction. A national Communication Centre for surveillance is established in IPH Batut, based on the European Centre for Disease Prevention and Control (ECDC) methodology, which provides online communication in the case of pandemics in order to coordinate the national network of IPHs and to be in contact with ECDC (in line with Regulation (EC) No 851/2004).

Since 2010, positive changes have taken place in national statistics, facilitating improved monitoring of health behaviour and social inclusion, including through the Global Youth Tobacco Survey (GYTS), the European School Survey Project on Alcohol and Other Drugs (ESPAD), the Multiple Indicator Cluster Survey (MICS), SILC, the European System of Integrated Social Protection Statistics (ESSPROS database), European Quality of Life Surveys (EQLS), the 2014 Structure of Earnings Survey, and the Mapping of Social Care Services within the Mandate of Local Governments. However, there is still a lack of disaggregated administrative data that would help identifying disparities regarding ethnicity, disability and gender or between urban and rural populations. Data availability at the municipal level was enhanced significantly with the launch of the new Municipal DevInfo database in 2012. This database, developed by SORS in cooperation with UNICEF, contains 142 socioeconomic indicators disaggregated by gender

and other variables for all 168 Serbian municipalities, and enables analysis of multiple regional disparities at the national level for health variables such as child survival, health care, immunization, safe motherhood and tuberculosis (http://devinfo.stat.gov.rs/Opstine/libraries/aspx/Home.aspx).

Regarding health care quality indicators, highly relevant indicators include screening for (colon, cervical and breast) cancer, as well as the survival rate after cancer treatment. Fully reliable and comparable data on the entire population (rather than only the population covered by the National Cancer Screening Programme) are currently unavailable (SIPRU, 2017). Nevertheless, IPH Batut publishes annual reports on health care quality indicators. In recent years, the system for monitoring health care quality and outcomes has been markedly improved, which allows better insights into the work of health services (the 2010 Rulebook on Health Care Quality Indicators) (Official Gazette, 2010d). The national survey on patient satisfaction has been ongoing since 2004. The survey showed that the satisfaction of patients increased over time which seems to indicate that reforms are yielding results.

Over the last decade, the Ministry of Health has invested significant efforts, through several projects supported by international partners (predominantly EU-funded), to develop an integrated health information system (IHIS) based on the electronic health record (EHR). Serbia has a legal basis for the introduction of the EHR, which also provides a reasonable level of privacy protection. In 2015, the Ministry of Health established the Unit for Integrated Health Information System (UIHIS) to coordinate, monitor and evaluate all developments, projects and initiatives in the health system in Serbia in the field of health informatics and e-health. In addition to the introduction of the EHR in almost all primary care centres (*Dom zdravlja-s*), significant improvements in hospitals started with the Integrated Health Information System (EU-IHIS) project (EU-IHIS, 2015), which aimed to establish interconnectivity between hospitals and primary care centres based on the EHRs (see section 4.1.3). The project lasted 3.5 years and enabled IHIS implementation in 19 health care institutions throughout Serbia as well as further development of the EHR, with EU financial support, in cooperation with the Ministry of Health, the WHO Country Office and the United Nations Office for Project Services (UNOPS).

Currently, more than 200 health care institutions in the public sector, from a total of 355, have EHRs. Out of 158 primary care centres, 152 have electronic information systems that are in use, as well as the electronic

history of the disease in over 50 hospitals (EY, 2016). All software is compliant with the national standard, the 2009 Rulebook on the Content of Technological and Functional Requirements for Establishing the Integrated Health Information System (Official Gazette, 2009h). In spite of these developments, health care institutions are still obliged to keep both paper and electronic records based on the provisions of the 2014 Law on Health Records and Reporting in the Field of Health (Official Gazette, 2014b).

IHIS manages information on health service activities at different levels of the health system. An example of good practice is waiting lists of the NHIF, available at: http://www.rfzo.rs/index.php/osiguranalica/liste-cekanja. Waiting lists are accessible for patients and physicians. In Serbia, electronic waiting lists have been established since 2005 for the following medical interventions and procedures that are not urgent (NHIF, 2018a):

- magnetic resonance imaging (MRI)
- computerized tomography (CT)
- diagnostic coronary angiography
- cardiac catheterization
- revascularization of myocardium
- implantation of permanent artificial heart
- implantation of cardioverter defibrillator
- implantation of artificial heart valves
- implantation of grafts of synthetic materials
- implantation of endovascular prostheses
- implantation of hip and knee endoprostheses
- instrumental segmental correction of spinal deformity in children
- ophthalmic interventions (cataract surgery, intraocular lens implantation).

Only the patient can see his/her place on the waiting list in order to protect privacy in accordance with the 2013 Law on Patients' Rights (Official Gazette, 2013a). The patient's place on the list can be seen in a health institution where the health service for which he/she is waiting is being provided, or by checking the NHIF website by entering a protected personal identification number from the ID card, whose first seven digits as well as the last digit are exposed. Improvements are still ongoing to develop the interconnectivity of hospitals, and to include private hospitals in the IHIS, so that the search for optimal solutions for each patient is available before

scheduling on the waiting list. According to the World Bank and NHIF data, in 2013 nearly half (46.6%) of patients who underwent an intervention in Serbia had to go on a waiting list, and only one third of listed patients (36%) received treatment as waiting lists were too long. Average waiting times were 450 days for hip replacement, compared with 101 days on average in OECD countries, and 707 days for knee replacement (123 days in OECD) (EY, 2016).

2.7 Regulation

The health system is regulated by national policy and legal instruments. Furthermore, many international and EU documents, instruments, health policies and strategies have an impact on the developments in the health system in Serbia.

The reform of the health system was initiated in 2005 with the adoption of the Health Care Law, the Health Insurance Law, and the Law on Health Professional Chambers. These three laws, in addition to the Law on Drugs and Medical Products adopted in 2004, make up the basic framework for transition of relevant EU legislation.

The main challenge for Serbia in the years to come will not only be the transposition of the aquis but also its full implementation and application. Serbia is faced with an obligation to implement and apply a very large volume of legal regulations in the public health sector (Bjegović-Mikanović, McGuinn & Petrovic, 2013). The competent authority for the implementation of the public health *acquis* is the Ministry of Health. Its Department for European Integration, together with other relevant institutions, is directly working on monitoring harmonization in the field of health. EU rules protect consumers in relation to product safety, dangerous imitations and liability for defective products. The EU also ensures high common standards for tobacco control, blood, tissues, cells and organs, patients' rights in cross-border health care, and serious cross-border health threats including communicable diseases, as well as medicines for human and veterinary use.

2.7.1 *Regulation and governance of third-party payers*

The 2019 Health Insurance Law contains provisions on compulsory health insurance, aiming to guarantee equity and solidarity in health financing and the provision of health care for the whole population, with priority given to vulnerable groups. The organizational relationship between the main purchaser (NHIF) and providers is contract-based and centralized, and the government plays a regulatory role through steering the 2017 Health Care Plan from Compulsory Health Insurance in Serbia, which is adopted each year. It provides types and volume of health services, which will be provided by the compulsory health insurance. The Ministry of Health gives its opinion about priorities in this Plan, and the Ministry of Finance scrutinizes its financial implications. Nevertheless, the Plan serves for the individual contracting process between the NHIF, through its regional branches and each provider at primary, secondary and tertiary level, to determine the final content of contracts. The contracts also consider the financial plan of the NHIF, as well as plans of each individual provider. Each contract contains type, volume or quantity of health services, measures for ensuring the quality of health care provided to insured persons, on the basis of norms of staff and standards of work necessary for the realization of health care, the compensation or price paid by the regional branch or the NHIF for the provided health services, the method of calculation and payment, control and responsibility for performing obligations under the contract, the deadline for the implementation of the undertaken obligations, manner of resolving the disputed issues, termination of the contract, as well as other mutual rights and obligations of the contracting parties.

Regulatory arrangements relating to cross-border health care purchasing and provision are based on the international social insurance contracts and are defined in the 2005 Health Insurance Law (Article 29), with continuation in the 2019 Health Insurance Law. The NHIF adopts a general act each year, after approval of the government, which closely regulates the conditions, method and procedure, as well as the types of diseases, conditions or injuries for which treatment abroad may be authorized.

2.7.2 *Regulation and governance of provision*

The basic regulation and governance of providers, both health institutions and health professionals, are subject to the 2019 Health Care Law and the 2006–2018 Decree on the Plan of the Health Institutions' Network, which serves for the establishment of publicly owned health institutions. The 2018 Plan of the Health Institutions' Network determines the number, structure, capacities and distribution of health institutions and their organizational units by levels of health care, and the organization of emergency medical services. The Ministry of Health performs the regulatory function. Based on the decision by the Ministry of Health on the fulfilment of conditions for performing health care activities, the health institution is registered in the registry with the competent court, in accordance with the 2019 Health Care Law.

Since 2005, municipality self-governance bodies, such as municipal governments and parliaments, have the ownership and management rights for the state providers of primary care, while institutions at secondary and tertiary level are under the ownership and governance of the Ministry of Health. The 2019 Health Care Law introduces a greater degree of centralization by transferring ownership for primary care institutions and responsibility for management (nomination of directors of primary health care institutions) from the municipality to the provincial and national level (see section 2.6). The main argument by the Ministry of Health for this refers to better organization, better staffing and distribution of human resources with the possibility to increase efficiency. Additional changes are envisioned in planning mechanisms. For example, the 2010 Plan for Development of Health Care in the Republic of Serbia was endorsed by the parliament in 2010, while according to the new 2019 Health Care Law, it will become the responsibility of the government in the future.

Each state health institution has a statute which regulates its main activities, the internal organization, the management, business, and conditions for appointment and dismissal of directors, the deputy directors or the assistant director for educational and scientific research work, as well as other issues of importance for the work of the institution. The founders of the state health institutions approve the statute having obtained agreement from the Ministry of Health. Each state health institution, prescribed by the 2019 Health Care Law, has internal mechanisms to ensure that professional staff achieve certain

standards of competence and ethical behaviour, with performance assessment being the responsibility of: the Professional Council (responsible for continuing professional development); the professional collegium (issuing professional statements); the ethical board (concerns for all ethical issues including clinical research); and the Commission for Continuous Quality Improvement (working on health care quality assurance, monitoring and control, in cooperation with the Ministry of Health inspection services and AZUS).

The chambers of five regulated professions (physicians, nurses and medical technicians, dentists, biochemists and pharmacists), as professional associations of health workers, have formulated Codes of Professional Ethics, which establish ethical principles in the performance of their professional duties. They issue licences and re-licenses for work for each health professional, which is regulated by the 2005 Law on Chambers of Health Workers (Official Gazette, 2005a).

Since adoption of the Health Care Law in 2005, the movement for continuous improvement of health care quality has started. The government has endorsed a Strategy for Continuous Improvement of Health Care Quality and Patient Safety (Official Gazette, 2009) in 2009, with five strategic objectives:

1. Creating conditions for consumers/patients to be at the centre of the health system.
2. Improving the professional knowledge of health workers and raising awareness about the importance of continuous improvement of health care quality and development of specific knowledge and skills.
3. Creating conditions that promote the culture of continuous improvement of health care quality and patient safety in health care institutions.
4. Providing safety, security and cost–effectiveness of health technologies.
5. Providing financial incentives for continuous improvement of health care quality and patient safety.

In 2010, the Ministry of Health introduced regular monitoring of health care quality indicators in state health institutions with transparent reporting (available to the public) published by IPH Batut. The 2010 Rulebook

on Health Care Quality Indicators presents over 120 process and outcome indicators (Official Gazette, 2010d) (for details see section 7.4).

With EU financial support, the Agency for Accreditation of Health Care Institutions (AZUS) was founded in 2008, starting its work in 2009 (AZUS, 2018) (see section 2.2). In 2010, over 90 external auditors were trained. In 2017, 100 additional external surveyors gained continuing training by AZUS in cooperation with UNICEF (AZUS, 2018). The Agency formed a special working group in 2010 for the development of standards for laboratories, pharmacies and diagnostic imaging. For the design of the Serbian accreditation system, ISQua (International Society for Quality in Health Care) standards were adopted by AZUS as the benchmark. AZUS adopted the Secondary and Tertiary Health Care Accreditation Standards and the Primary Health Care Accreditation Standards and government approval was obtained in 2010. In 2010, the accreditation process started in 82 primary care centres (*Dom zdravlja-s*), of which 70 have successfully obtained quality certificates (Ministry of Health, 2015). Since 2010, AZUS has hosted the Republic Scientific Committee (RSC) for Clinical Guidelines development and implementation. During 2011, eight new national good clinical practice guidelines were developed: diagnosing and treating lipid disorders, ischaemic heart disease, ischaemic stroke, lung cancer, depression, hypertension, treatment of adult hernia and thyroid dysfunction.

The Ministry of Health and the NHIF have established incentives for health institutions in 2013 to seek accreditation: priority in the contracting with the NHIF and its regional branches is given to health institutions that are accredited by AZUS (Article 179 of the 2005 Health Insurance Law).

2.7.3 *Regulation of services and goods*

BASIC BENEFIT PACKAGE

The statutory benefits package is broadly defined in the 2005 Health Insurance Law and includes, in addition to the right to all types of health care services, the right to compensation of earnings during temporary absence from work due to illness and reimbursement of transport costs related to use of health care by the insured person. The right to health care covered by compulsory health insurance specifically includes:

- measures for the prevention and early detection of diseases;
- examinations and treatment of women in relation to family planning, as well as during pregnancy, childbirth and maternity, up to 12 months after delivery;
- examinations and treatment in case of illness and injury;
- examinations and treatment of dental diseases;
- medical rehabilitation in case of illness and injury;
- medicines and medical devices; and
- devices for movement, standing and sitting, aids for vision, hearing, speech, dental allowances, and other aids.

HEALTH TECHNOLOGY ASSESSMENT (HTA)

Serbia has no agency for health technology assessment (HTA). According to the 2019 Health Care Law, the HTA Committee established by the Ministry of Health in 2006 carries out HTA, based on the analysis of medical, ethical, social and economic consequences and impact of developing, disseminating or using health technologies in the provision of health care. Members of the HTA Committee, with 5-year mandates, are prominent health experts who have made a significant contribution to the development of certain fields of medicine, dentistry, pharmacy, the application and development of health technologies, or in the performance of health care services.

In 2003, the Ministry of Health acknowledged the need to establish transparency in decision-making processes regarding the introduction of innovative pharmaceuticals or technologies and their distribution in the health system in the framework of both Serbia Health Projects supported by World Bank loans (World Bank, 2003, 2014).

Yet, HTA is still not routinely used in decision-making processes, at least not in a systematic way using criteria such as efficacy and cost–effectiveness. Several articles of the 2019 Health Care Law (Articles 48–52) indicate the obligation to apply HTA, but the approach applied in Serbia is more concerned with monitoring and coordinating the current use of health technologies than with affordability. Evidence of quality, safety, and efficiency of health technology is very often accepted as provided by the applicant.

The situation regarding drugs is more precisely defined and considerably closer to a usual HTA process. The drug market in Serbia shows a steady growth and has increased almost three times during the past 10 years

(Chamber of Commerce and Industry of Serbia, 2016). In 2015, generic drugs accounted for 79% of the market (counted in packs) or 55% of the market in financial terms (see section 2.8.4).

The scope of work of the HTA Committee (Ministry of Health) is mostly related to the analysis of investment needs and covers the introduction of capital investments all around the country. More often, it deals with problems associated with planning health care services and systems, rather than implementing technology assessments. There are no clear procedures with objective and verifiable criteria related to the effectiveness, cost–effectiveness, or budget impact, in the process of listing medical devices or health care services at the NHIF or the Ministry of Health.

The scope of work of the Central Drug Committee (CDC) in the NHIF is considerably closer to the concept of HTA, but is focused only on drugs. CDC operates with limited resources in terms of its financing and expert capacity, operationally aiming at a very "rapid assessment". Sometimes the Committee makes decisions that are more expert-based than evidence-based (especially when it comes to clinical effectiveness or cost–effectiveness).

In decision-making, there is no opportunity for the inclusion of, or for input from, civil society or patient groups' representatives. Criteria that specify the process of prioritization of either priority area or drugs are not developed and applied. Inherited ways of the distribution of funds which have been collected by the compulsory health insurance have not involved principles of efficacy and cost–effectiveness. A large amount of routinely collected data remains unused. The lack of knowledgeable personnel in the area of health economics, together with the lack of clear and verifiable criteria for prioritization as well as for inclusion or exclusion of services in the basic package, together with broadly defined health care rights, also compromises the decision-making process (Atanasijevic & Zah, 2017).

2.7.4 *Regulation and governance of pharmaceuticals*

Marketing authorization of drugs in Serbia is harmonized with EU regulations and implemented by the Medicines and Medical Devices Agency of Serbia, while pricing and reimbursement are set at the national level (the 2010 Law on Medicines and Medical Devices). Drug prices in Serbia are under state control and regulated by the 2005 Decree on Criteria for Formation of

Prices for Drugs for Use in Human Medicine, which are under a prescription regimen. The decision on the highest prices of drugs for use in human medicine, which are issued by prescription, is usually issued twice a year (Atanasijevic & Zah, 2017).

After the government makes a decision on the maximum permitted wholesale price of a drug, the marketing authorization holder has the option to apply for the drug to be prescribed and issued at the expense of the compulsory health insurance (Drug List). However, the regulations stipulate that, in the case of inclusion in the Drug List, the NHIF establishes a final price, based on the minimal price in the reference countries (that is, Italy, Slovenia and Croatia). In this way, any drug on the Drug List goes through the administrative procedure for determining the price twice. Thereafter, if the drug gets placed on the Drug List, its final (third) price on the market is the price achieved in the process of centralized public procurement. That rule also applies to all, generics and innovative/original drugs.

The Central Drug Committee housed within the NHIF assesses all applications for inclusion of new pharmaceuticals on the reimbursement list, in accordance with the current Rulebook on the conditions, criteria, the methods and procedure for placing the drug on the Drug List, amending the Drug List, or for removing the drug from the Drug List (Rulebook) (Official Gazette, 2014c). All members of the Central Drug Committee are required to sign a statement on conflict of interest; the entire process of making decisions substantially corresponds to the procedure of HTA.

The key information required by the 2014 Rulebook is: evidence of safety and efficacy, together with a pharmaco-economic assessment, cost of defined daily dose, and budgetary impact. Furthermore, cost–effectiveness analysis is required, even though it is still not a routine part of the assessment carried out by the NHIF.

During the decision-making process, the Central Drug Committee takes into consideration advice from 1) approximately 20 Expert Committees (established by the Ministry of Health) composed of medical specialists, mostly professors from Academia, and 2) the Pharmaco-economic Committee in the NHIF.

First-in-class medicines based on novel mechanisms must demonstrate superior efficacy/safety and must not be priced higher than the lowest published wholesale price in Slovenia, Italy or Croatia (Official Gazette, 2014c). New drugs within an existing therapeutic class may be added to the list if

there is no effect upon the existing budget. According to the Rulebook, generics lower the price (10 to 30%) of already listed drugs with the same international nonproprietary name (INN); that is, according to the 2014 Rulebook, a first generic could reach a maximum of 70% of the price of the original drug already listed; a second generic with the same INN could have a maximum of 90% of the price of the first generic drug on the list; likewise, the third and fourth generics are priced at 90% of the foregoing generic. All additional entries of drugs with the same INN are determined at the level of price of the fourth generic.

Although the regulations of the 2014 Rulebook allow for using managed entry agreements as a way to enter the Drug List, this option has never been used until the end of 2017. In October 2016, based on the priorities defined by the Expert Committees, the Central Drug Committee adopted the proposals of 23 original/innovative drugs for new indications in four prioritized areas (children, transplantation, haematology and oncology). For 18 of these drugs, special agreements were signed. Because invisible pricing is not an option, two types of agreements were implemented: 1) cross-product, giving some percentage of discount on the drug already listed if the new drug enters the list; and 2) natural rebate. It was the first time this type of budget control was implemented to allow patients to get the top expensive medicines. The Ministry of Health approves the Drug List together with the Ministry of Finance and the government.

Some drugs that are noted by the National Institute for Health as "not cost-effective even at a zero price" (Davis, 2014) could be found in the Serbian Drug List without any additional explanatory notes (e.g. cetuximab for head and neck cancer or bevacizumab for metastatic colorectal cancer) (Atanasijevic & Zah, 2017).

Current mechanisms for listing medicines on the Drug List are not efficient enough to meet requirements by the EU Transparency Directive 89/105/EEC (Council of the European Union, 1989) (e.g. reproducibility of decisions related to the availability of objective information, such as the inclusion and exclusion criteria as well as health care priorities based on real population needs). However, there is no specific form to start an appeal against the decision of the Central Drug Committee (Atanasijevic & Zah, 2017).

2.7.5 *Regulation of medical devices and aids*

Regulation of medical devices and aids meets the specified consumer/patients' rights in Serbia. In particular, the 2005 Health Insurance Law and the 2010 Law on Medicines and Medical Devices prescribe that an insured person has the right to obtain medical devices and aids for providing support, preventing the occurrence of deformities and correcting existing deformities, and facilitating the performance of basic life functions.

Through a general act, the NHIF determines the type of medical devices and aids, as well as indications for their use, the standards of the materials from which they are made, the time limits, the procurement, maintenance and their retrieval, as well as the manner and procedure of exercising the right to medical-technical assistance. Article 131 of the 2019 Health Insurance Law offers the list of conditions for which the insured person will have medical devices and aids covered at 100%, 95%, 80% and 65% of the procurement price.

2.8 **Person-centred care**

2.8.1 *Patient information*

The legal framework for better information for patients includes the 2013 Law on Patient Rights, the 2019 Health Care Law, and the 2019 Health Insurance Law. Article 7 of the 2013 Law on Patients' Rights states that the right to information implies that patients have the right to all information related to their health, health service and ways of using it, as well as to all available information based on research and technological innovations. Patients are entitled to information about the name and professional status of health care providers participating in their treatment. In addition to medical information, they are entitled to information related to health insurance and procedures for exercising those rights (see Table 2.1). Patients are entitled to prompt information, provided in their best interest (Official Gazette, 2013a). There is also an obligation of providing broader information related to the preservation of health and healthy lifestyles, as well as on harmful factors of living and working environments, which may have negative consequences for health (Bjegović-Mikanović, Šantrić & Overall, 2015). The

right to information correlates to the obligation of health institutions and other legal subjects to provide that information. Information may be related to the issuing of medical results, certificates, discharge papers and other documents related to treatment. The 2014 Law on Health Records and Reporting in the Field of Health explicitly regulates both patient's obligations and rights to obtain discharge papers with epicrisis (that is, a critical or analytical summary of a medical case history) after treatment, childbirth or rehabilitation issued by inpatient institution (Official Gazette, 2014b).

The 2003 Health System Reform Strategy envisaged placing the citizen/user/patient in the centre of the health system of Serbia, and clarifying the behaviour of key actors: the users, the service providers, the insurance system and the Ministry of Health, with the aim of developing a sustainable system for the 21st century (Ministry of Health, 2003). Having better-informed citizens (patients) on their rights and their roles in the decision-making processes, secures implementation of their social and individual rights in the health system and the development of better relationships with health staff based on respect of personality and participatory rights of patients/consumers (Ministry of Health, 2003). According to the 2019 Health Care Law, patients should be adequately informed about the ways of preserving and improving health, prevention and treatment of diseases, rehabilitation and quality of health services provided in health institutions of the state and private sector in the country. Therefore, a person (known as "patient's counsellor" or "insurer's rights protector") is identified in each municipality and health care institution whom the patient/beneficiary may address for information and protection of patient/insurers rights (Official Gazette, 2019a).

The Ministry of Health has launched patient rights campaigns in 2013 ("You're right" and "Health is a smile spread"). There were also projects for cooperation between the state and patient organizations in 2013 (for example, the project of cooperation between the Red Cross of Serbia and the Health Care System for TB control, from 2010 to 2015, (Mandic, Curcic & Sagic, 2013) and Protection of Patients' Rights at the Local Level).

Articles 8–26 of the 2019 Health Care Law prescribe that citizens of the country have the right to information that is necessary for the preservation of health and the acquisition of healthy living habits (Official Gazette, 2019a).

An important source of information that guides citizens through the health system is the National Health Insurance Fund (NHIF). The NHIF

publishes on its website (http://www.rfzo.rs) an insurer's health booklet that contains information about how residents can settle their compulsory health insurance status in line with the 2005 Health Insurance Law. It also publishes the rights of insured persons, the rights of pregnant women under the compulsory health insurance, the provision of health care abroad and the urgent medical care that is provided to foreign citizens during their temporary stays in Serbia, as well as the approved Drug List. Insurers can also review the status of a payment claim, and check the "chosen doctor" and insurance certificate. The NHIF provides national electronic monitoring of waiting lists for each institution, which is expected to provide more precise and comprehensive data in the near future, and the majority of health institutions update the information on a monthly basis.

2.8.2 *Patient choice*

In accordance with the 2019 Health Care Law, the 2019 Health Insurance Law, and the 2013 Law on Patient Rights, a patient has the right to free choice of a medical doctor, a dentist, and health facilities, as well as to free choice of proposed medical measure by the physician (see Table 2.2).

In primary care, adult patients must choose a medical doctor or specialist in general medicine as a personal general practitioner who will provide them with services for adult health care. They also have to choose a personal dentist who may be a doctor for dental health (dentist without specialization) or a specialist, and women have to choose a gynaecologist as a "chosen doctor" for the women's health care service. These primary care physicians are called "chosen doctors" who act as gatekeepers (see section 5.3), as they provide access to secondary and tertiary care. Patients can choose their secondary or tertiary provider anywhere in the country every time they are given a referral.

Compulsory health insurance is provided only by the NHIF. Compulsory health insurance coverage includes health insurance in case of illness and injury not related to work and health insurance in case of work-related injury or occupational disease (see section 3.3.1). The 2019 Health Insurance Law enables voluntary health insurance (VHI), but the demand for it in Serbia is rather small (see section 3.5).

TABLE 2.1 Patient information

TYPE OF INFORMATION	IS IT EASILY AVAILABLE? (Y/N)	COMMENTS
Information about statutory benefits	Y	Legal acts
Information on hospital clinical outcomes	N	–
Information on hospital waiting times	Y	NHIF website
Comparative information about the quality of other providers (for example, GPs)	Y/N	GP is able to see his/her own performance indicators and compare to other GPs; however, it is not possible for hospital care
Patient access to own medical record	Y	Law on patients' rights
Interactive web or 24/7 telephone information	Y	Website
Information on patient satisfaction collected (systematically or occasionally)	Y	Annual survey
Information on medical errors	N	–

TABLE 2.2 Patient choice

TYPE OF CHOICE	IS IT AVAILABLE? (Y/N)	DO PEOPLE EXERCISE CHOICE? ARE THERE ANY CONSTRAINTS (FOR EXAMPLE, CHOICE IN THE REGION BUT NOT COUNTRYWIDE)? OTHER COMMENTS?
	Choices around coverage	
Choice of being covered or not	N	Through compulsory health insurance
Choice of public or private coverage	N	Citizens are all covered by the NHIF, but additional private insurance is available
Choice of purchasing organization	N	The NHIF
	Choice of provider	
Choice of primary care practitioner	Y	The concept of "chosen doctor"
Direct access to specialists	N	Referral from GP
Choice of hospital	N	–
Choice to have treatment abroad	N	–

	Choice of treatment	
Participation in treatment decisions	Y	–
Right to informed consent	Y	–
Right to request a second opinion	Y	–
Right to information about alternative treatment options	Y	–

2.8.3 *Patient rights*

Patients' rights in Serbia are summarized in Table 2.3. In 1999, the unofficial Charter of Patients' Rights, proposed by a group of public health experts (a sort of think tank), was the first document in Serbia that pointed out the importance of the patient (http://www.pravni.edu.rs/prof/Materijali/dramar/v.stambolovic.prava%20pacijenta.pdf). Several years later, the 2005 Health Care Law (Official Gazette, 2005a) modelled the doctor–patient relationship following the model of the 2002 European Charter of Patients' Rights and in a separate chapter it highlighted the 12 patients' rights in line with the 1990 Convention on the Rights of the Child and with Family Law. The Law on Patients' Rights was adopted in 2013. It guarantees the patient with the right to quality and continuous health protection in accordance with their state of health, generally accepted professional standards and ethical principles.

These rights must be respected by all health care providers, public or private. These include:

- the right to access health care.
- the right to information.
- the right to preventive measures.
- the right to quality health services.
- the right to patient safety.
- the right to information on proposed medical measures.
- the right to free choice of provider.
- the right to another expert opinion.
- the right to privacy and confidentiality.
- the right to consent.

- the right to access medical records.
- the right to confidentiality of patient health information.
- the right to participate in medical research.
- the right of a child to be accommodated for hospital treatment.
- the right of the patient to leave inpatient institutions.
- the right to alleviate suffering and pain.
- the right to respect for the patient's time.
- the right to complain.
- the right to compensation.

The 2013 Law on Patients' Rights also sets out patient obligations in relation to the responsibility for personal health, towards other users, health care providers, health workers, or health care associates, as well as other employees in the health institution and private practice.

According to the 2019 Health Care Law and the 2019 Health Insurance Law, insurees have the right to health care, the right to compensation of earnings during temporary absence from work and the right to reimbursement of transport costs related to the use of health care.

PUBLIC PARTICIPATION

There are several mechanisms for direct public participation in health care and for exercising patient rights. An important mechanism for patient participation in health care is the 2009 Strategy for Continuous Improvement of Health Care Quality and Patient Safety (Official Gazette, 2009d), which includes routine supervision over the work of health institutions and staff and an annual survey of patient satisfaction with quality of health care services and patient safety measures. Patients' experiences in health care are regularly surveyed and IPH Batut publishes overall patients' satisfaction scores in annual reports that are achieved for each health institution at primary, secondary and tertiary care level. In general, the experience of patients seems to be very positive: in 2015, the average score of user satisfaction with primary care was 3.96 out of 5.00, while with hospital treatment it was 4.30 out of 5.00 (IPH Batut, 2015). On average, in primary care, patients were more satisfied with the working hours of the health institution, shorter waiting times and website information, but less satisfied with the information they

get from health professionals (that is, the doctor does not allocate enough time to talk to them, the doctor does not listen to them carefully and they do not receive clear explanations about the medicines prescribed for them) and with the kindness of the nurses at the counter (IPH Batut, 2015). In hospitals, patients were most satisfied with the kindness of the staff, with nursing care and doctors' services and least satisfied with the waiting time at the counter and hospital nutrition. The scores are similar to the results obtained in previous years (IPH Batut, 2018c).

All proposed laws and regulations undergo public debate, and patients, patients' organizations and users of health care services may directly participate in the definition of health legislation during public hearings by participating in debates or by sending comments.

In the process of purchasing health services, however, patients and patients' organizations can participate only indirectly, voicing their concerns and suggestions in the media and public debates. Recently, the management of the NHIF has opened a call for permanent contact with citizens and insurees and invited them to submit written suggestions, remarks, compliments and advice related to the quality of work of the NHIF.

As of 2015, the NHIF had established cooperation with insured persons, patient associations, and persons with disabilities so to involve them fully in decision-making regarding the exercise of the right to health care at the expense of compulsory health insurance. The management of the NHIF has established the Centre for Cooperation with Insured Persons, Patients' Associations, Persons with Disabilities and Public Information within the directorate of the NHIF and two offices in its branch in the capital – the Office for Cooperation with Associations of Persons with Disabilities, and the Office for Cooperation with Patients' Associations. In 2015, 28 representatives of different patients' organizations had meetings with the management of the NHIF. The patients' and users' requests were mostly related to the increase in the scope of the right to health care, which is financed by compulsory health insurance, to provide finance for necessary therapy and extended rehabilitation, as well as changes in the procedures for exercising the right to health care and to amend the Rulebook on Medical Technical Aid Devices.

COMPLAINTS PROCEDURES

Patients can choose between various institutions to file their complaint; the choice depends, above all, on what kind of right is perceived to have been violated. Patients may ask assistance for the implementation and protection of their rights from managers and patient rights' guardians in each health institution, from health inspectors of the NHIF and the Ministry of Health, committees at health professionals chambers, legal counsellors at the local government level, the Ombudsman of the Republic of Serbia, the National Office of the President of the Republic of Serbia as well as from patients organizations, nongovernmental and international bodies and the Court of Justice (Bjegović-Mikanović, Šantrić & Overall, 2015).

TABLE 2.3 Patient rights

	Y/N
PROTECTION OF PATIENT RIGHTS	
Does a formal definition of patient rights exist at national level?	Y
Are patient rights included in specific legislation or in more than one law?	Y
Does the legislation conform with WHO's patient rights framework?	Y
PATIENT COMPLAINTS AVENUES	
Are hospitals required to have a designated desk responsible for collecting and resolving patient complaints?	Y
Is a health-specific Ombudsman responsible for investigating and resolving patient complaints about health services?	Y
Other complaint avenues?	Y
LIABILITY/COMPENSATION	
Is liability insurance required for physicians and/or other medical professionals?	N
Can legal redress be sought through the Courts in the case of medical error?	Y
Is there a basis for no-fault compensation?	Y
If a tort system exists, can patients obtain damage awards for economic and non-economic losses?	Y
Can class action suites be taken against health care providers, pharmaceutical companies, etc.?	N

According to the 2013 Law on Patient Rights, the protection of patients' rights is provided and financed by a local self-government unit, which determines a person who carries out the duties of Counsellor for Patients' Rights, and the local Health Council. According to the 2019 Health Insurance Law, the protection of the rights of the insured person is provided and financed by the organization of health insurance by appointing the Protector of Patients' Rights in each health institution. The Counsellor for Patients' Rights performs a dual role: they act upon the patient's complaint and provide necessary advice and information on patients' rights. The Counsellor for Patients' Rights is obliged to react to the patient complaint without delay. This means that, within 5 working days, the health professional and the management team of the health institution has to provide all the information requested, data and opinions to the Counsellor. The Counsellor for Patients' Rights formulates the opinion and reports back to the patient, the head of the organizational unit and the director of the health institution within 3 days (this is sometimes delayed and can take 2–3 weeks). The director of the health institution is obliged to report about the measures that will be taken in connection with the objection within 5 working days of receiving a report from a patient counsellor. If a patient is dissatisfied with the report, he/she may address the Health Council and the Health Inspectorate, or the competent body of the health insurance organization where the patient is insured.

The protection of the rights of insured persons is regulated by the 2013 Rulebook on the Manner and Procedure for the Protection of the Rights of the Insured Persons of the NHIF (Official Gazette, 2013h). Protection of the rights of insured persons is performed by employees of the NHIF, so-called Protector of Rights of the Insured Persons, at the premises of the health institutions.

The aim is to provide a transparent and clear framework to support the fast and effective resolution of disputes. Since 2014, the reports of protectors have been published each year. As an example, during 2016, the Protectors of the Rights of Insured Persons addressed 18 850 persons with questions and problems in exercising rights from the compulsory health insurance, while at the same time 297 claims for violation of insuree's rights were submitted (NHIF, 2016). In 2017, the number of questions was similar; however, the number of claims decreased to 75 (NHIF, 2018f), probably linked to

improvements in quality of health care, although the number of successful claims is unknown. The most common reason for filing a complaint was the inability to exercise the right to specialist-consultative care or examination.

2.8.4 *Patients and cross-border health care*

Persons who are temporarily staying abroad have the right to emergency medical assistance and are entitled to health services abroad in line with international agreements. Serbia has concluded international agreements with 20 countries, defining cooperation in the field of health insurance.

However, for an insured patient explicitly seeking health care abroad, the compulsory health insurance in Serbia may cover the treatment according to the 2007 Rulebook on the Conditions and Method of Sending Insured Persons for Treatment Abroad (Official Gazette, 2007c).

During 2015, 485 insured patients were sent for treatment abroad, largely in the field of neurosurgery, gastroenterology, haemato-oncology and cardiac surgery. Referral of a biological sample for analysis abroad because of suspicion of a rare genetic disease was approved for 169 patients. During the same time period, foreign experts came to Serbia for the treatment of 28 insured persons.

Foreign citizens, as well as Serbian citizens who live and work abroad, during their temporary stay in Serbia, have the right to urgent medical assistance. For insured persons from countries with which Serbia has an international agreement on health insurance, the right to urgent medical protection in Serbia exists.

3

Financing

Summary

- Total health spending reached 8.8% of GDP in 2017, at 1 319 US$ (PPP) per capita spending. However, public expenditure on health has steadily decreased in the last decade, at 57.6% of total expenditure on health in 2017, while private expenditure has increased (42.4% in 2017).

- Revenue flows to the health system through compulsory health insurance contributions, general taxation, OOP spending, VHI premiums and international donor-based funding initiatives. Compulsory health insurance contributions represent the largest share of total revenue for health from public sources (94%). Patients' contributions, mostly in the form of OOP payments, are a major source of private financing, amounting to 42.4% of current health expenditure in 2017.

- Almost the entire population (98%) is covered by health insurance. Mandatory health insurance rights include the right to health care, the right to salary reimbursement during temporary work disability and the right to the reimbursement of travel costs related to using health care services.

- Payment of health services is determined by a contract between the NHIF and health care providers. The requirement for contracting is that health care providers submit annual workplans to the NHIF,

or its branches, following the methodology defined by the Institute of Public Health of Serbia.

- Capitation was introduced in 2012 in primary health care institutions that provide the services of a “chosen doctor” (e.g. GP, paediatrician, gynaecologist, and children and preventive dentist), while a new model of payment based on DRGs was introduced at hospital level in 2019.

- Funding provided by donor agencies as well as loans from development banks have helped rebuild health infrastructure, provide training for health professionals, and have supported the introduction of capitation payments, DRGs, as well as develop integrated IT systems in health care, among other improvements in the Serbian health system.

3.1 Health expenditure

In 2017, Serbia spent 8.8% of GDP in health, and per capita spending was 1 319 US$ (PPP) (IPH Batut, 2018d, 2018e). After the continual increase in the proportion of GDP allocated to health in Serbia from 2001 to 2014, a similar or higher share of GDP spending on health was reached in 2014 than that of the majority of central and south-eastern European countries (Figs. 3.1 and 3.2). From 2015, a decrease in THE as a percentage of GDP has been noticed, with the lowest value in 2017 (8.8%), being the same as it was in 1995 (Table 3.1). Health expenditure per capita is still one of the lowest in the WHO European Region (Fig. 3.3) due to the low GDP. However, there has been an important increase in spending on health in absolute terms: total health expenditure per capita increased from 335 US$ (PPP) in 1995, to 1 319 US$ (PPP) in 2017, the highest in the last two decades (IPH Batut, 2018d).

Health financing from public sources is based on a nationally pooled health insurance system, with compulsory health insurance accounting for 94% of public expenditure on health (IPH Batut, 2018d). Public expenditure on health consists of compulsory health insurance expenditure, and national and local government expenditures. According to national health accounts data, the public share of total health expenditure, including general revenue

and compulsory health insurance sources, has decreased from 79.2% in 1995 to 57.6% in 2017. In 2017, public expenditure on health amounted to 516 US$ (1 319 at PPP) per capita. The share of public funds has remained in the range between 4.3% of GDP in 2000 and 5.1% in 2017, with the highest value in the last two decades reached in 2010 (6.2%) (WHO, 2019) (Table 3.1).

Expenditure of the Ministry of Health from the state budget and expenditure of the municipalities through community budgets account for a small share of public expenditure on health. In 2017, national government health expenditure accounted for 4.05% and of the Province of Vojvodina and all local governments in Serbia for 1.92% of public expenditure on health (IPH Batut, 2018d).

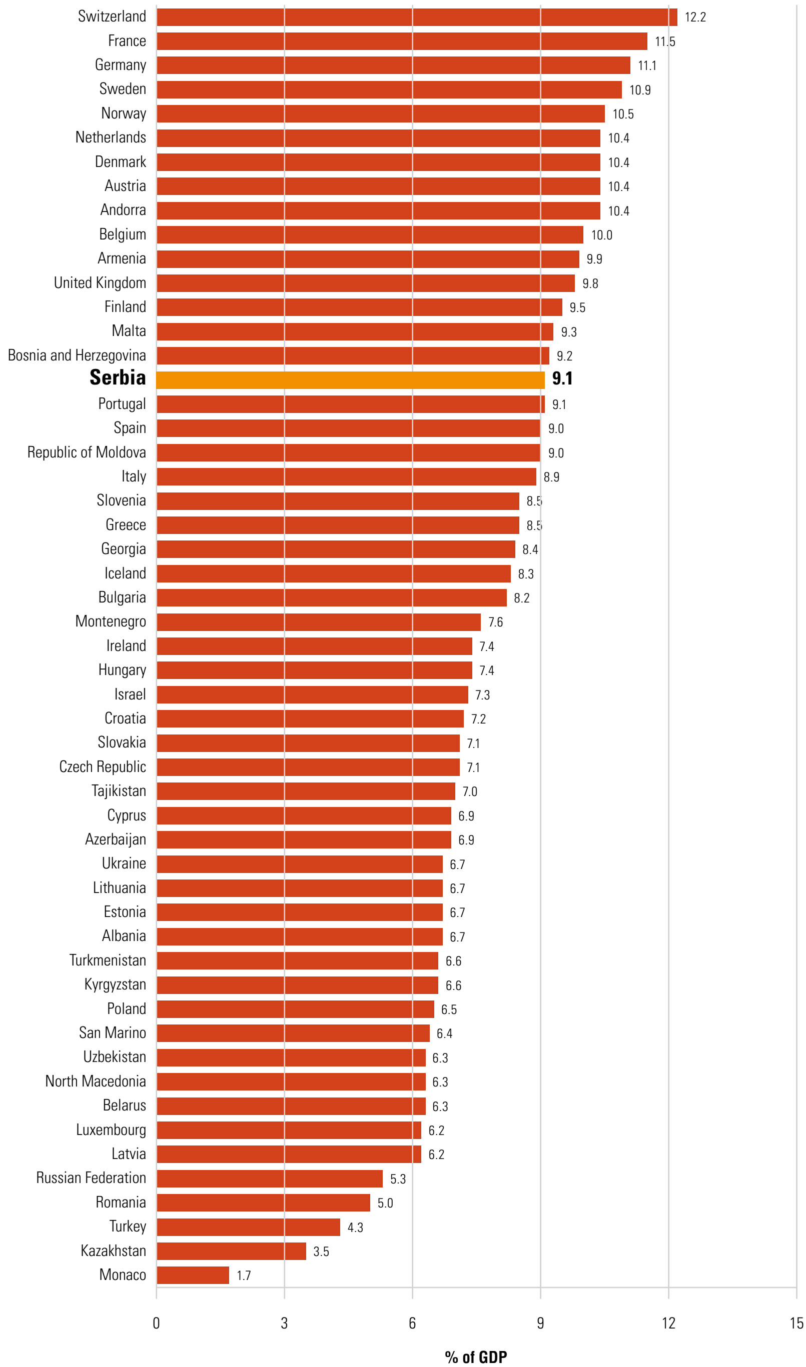
Private health expenditure is related to expenditure in voluntary health insurance (VHI), OOP expenditure, and other private health expenditure. Private expenditure on health in 2017 reached 42.4% of total health expenditure, which is two times higher than in 1995. The main share of private expenditure is OOP expenditure, reaching 96% in 2017, while VHI accounted for less than 1.73% of private expenditure on health that year (WHO, 2019; IPH Batut, 2018d) (Table 3.1).

TABLE 3.1 Trends in health expenditure in Serbia, 1995–2017 (selected years)

EXPENDITURE	1995	2000	2005	2010	2015	2016	2017
Total health expenditure in US$ PPP per capita	335	553	771	1 193	1 275	1 261	1 319
Total health expenditure as % of GDP	8.8	9.6	8.7	10.1	9.4	9.0	8.8
Public expenditure on health as % of total expenditure on health	79.2	78.5	66.0	61.9	58.1	58.0	57.6
Private expenditure on health as % of total expenditure on health	20.8	21.5	34.0	38.1	41.9	42.0	42.4
Government health spending as % of total government spending	22.3	24.0	14.3	14.3	12.0	11.7	11.7
Government health spending as % of GDP	–	4.3	5.7	6.2	5.4	5.3	5.1
OOP payments as % of total expenditure on health	–	29.6	29.8	36.4	40.6	40.5	40.7
OOP payments as % of private expenditure on health	84.8	84.7	88.0	95.5	96.8	96.3	96.0
VHI as % of total expenditure on health	–	–	0.54	0.33	0.42	0.58	0.73
VHI as % of private expenditure on health	–	–	1.58	0.87	0.99	1.39	1.73

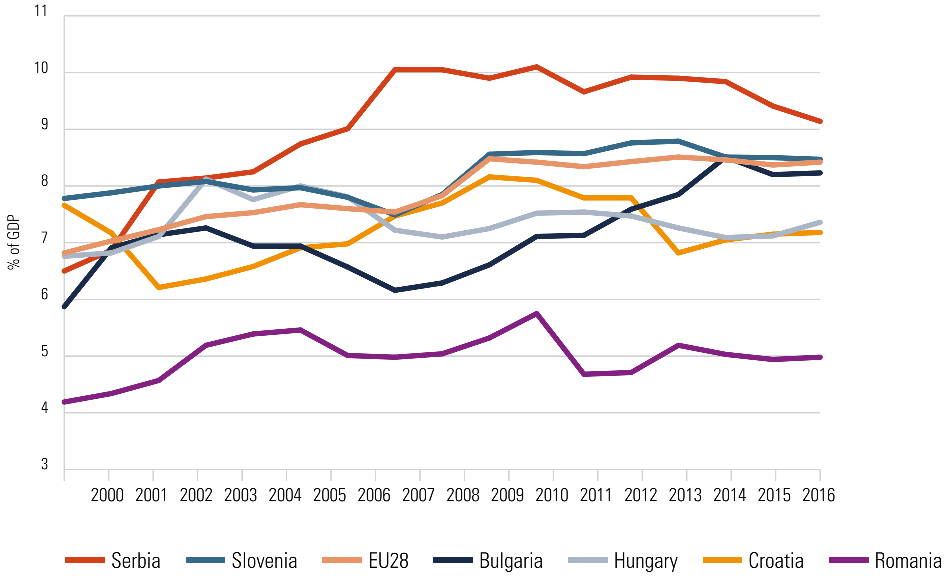
Source: WHO, 2019; IPH Batut, 2018d

FIGURE 3.1 Current health expenditure as a share (%) of GDP in the WHO European Region, 2016



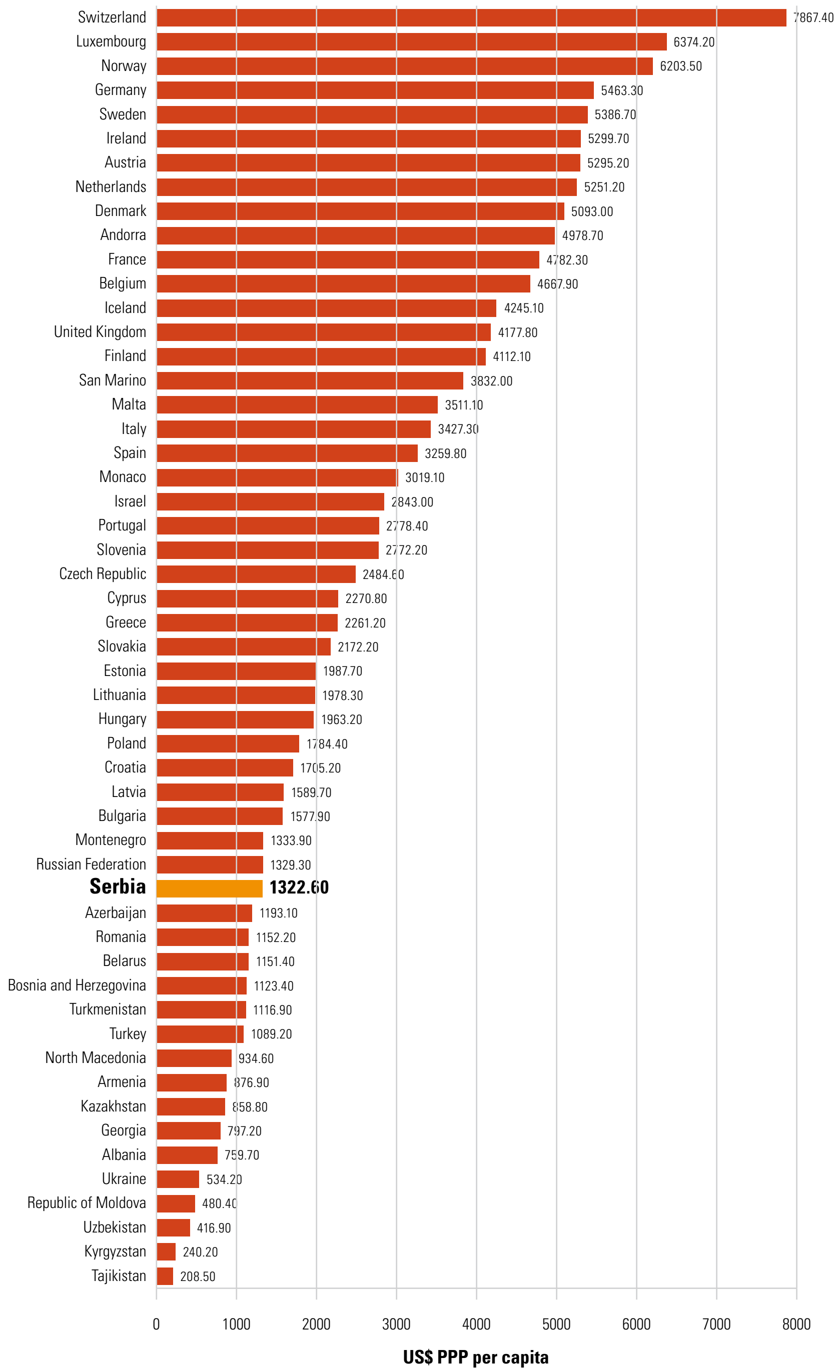
Source: WHO, 2019

FIGURE 3.2 Trends in current health expenditure as a share (%) of GDP in Serbia and selected countries, 2000–2016



Source: WHO, 2019b

FIGURE 3.3 Current health expenditure in US$ PPP per capita in the WHO European Region, 2016



Source: WHO, 2019

Available public health expenditure data by services in 2017 show the highest share of expenditure on curative care (at all three levels of care), then drugs and medical devices, rehabilitation and ancillary services (IPH Batut, 2018d) (Table 3.2).

TABLE 3.2 Health expenditure by service programme in Serbia, 2017

SERVICE	PUBLIC EXPENDITURE ON HEALTH (%)	TOTAL EXPENDITURE ON HEALTH (%)
Curative care	62.14	43.38
Rehabilitation	6.81	5.40
Long-term care	1.02	0.97
Ancillary services	6.71	8.78
Drugs and medical devices	14.75	32.59
Public health	6.70	7.80
Government administration	1.87	1.08

Source: IPH Batut, 2018d

3.2 Sources of revenues and financial flows

Revenue flows to the health system through compulsory health insurance contributions, general taxation, OOP spending, VHI premiums and international donor-based funding initiatives (Fig. 3.5).

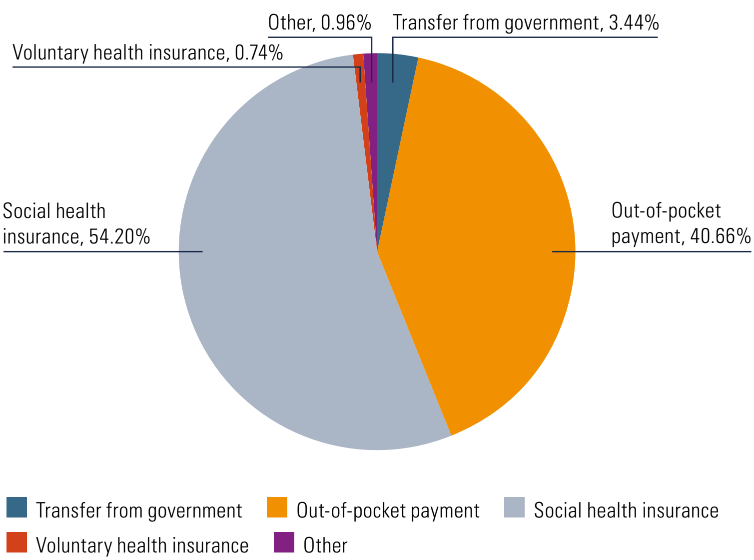
The centralized compulsory health insurance system is administered by the National Health Insurance Fund (NHIF) and funds from compulsory health insurance contributions represent the largest share (94%) of total revenue for health from public sources (IPH Batut, 2018e). The legal framework obliges the NHIF to guarantee universal access to a free package of health services. According to the 2019 Law on Health Care, funds to assure provision of health care to persons who are not covered by compulsory health insurance (uninsured persons, refugees and internally displaced persons, social assistance recipients and others) is provided from the state budget, which is transferred to the NHIF (2.9% of public health expenditure) (IPH Batut, 2018d).

The NHIF develops the financial plan each year. The legal basis and obligation for this is contained in the yearly Law on the Budget of the Republic of Serbia (Official Gazette, 2018d). The NHIF has to submit the annual financial plan, which regulates sources of revenues and expenditures, to the Ministry of Health, which is required to submit it to the Ministry of Finance. Approval of the annual financial plans of the NHIF has to be done by the National Assembly (see section 1.3).

The main source of revenue in total health expenditure is social health insurance which provides 54.2%. Two fifths (40.66%) of total expenditure on health comes from private OOP expenditure, while a very small amount (0.73%) comes from VHI premiums (Fig. 3.4).

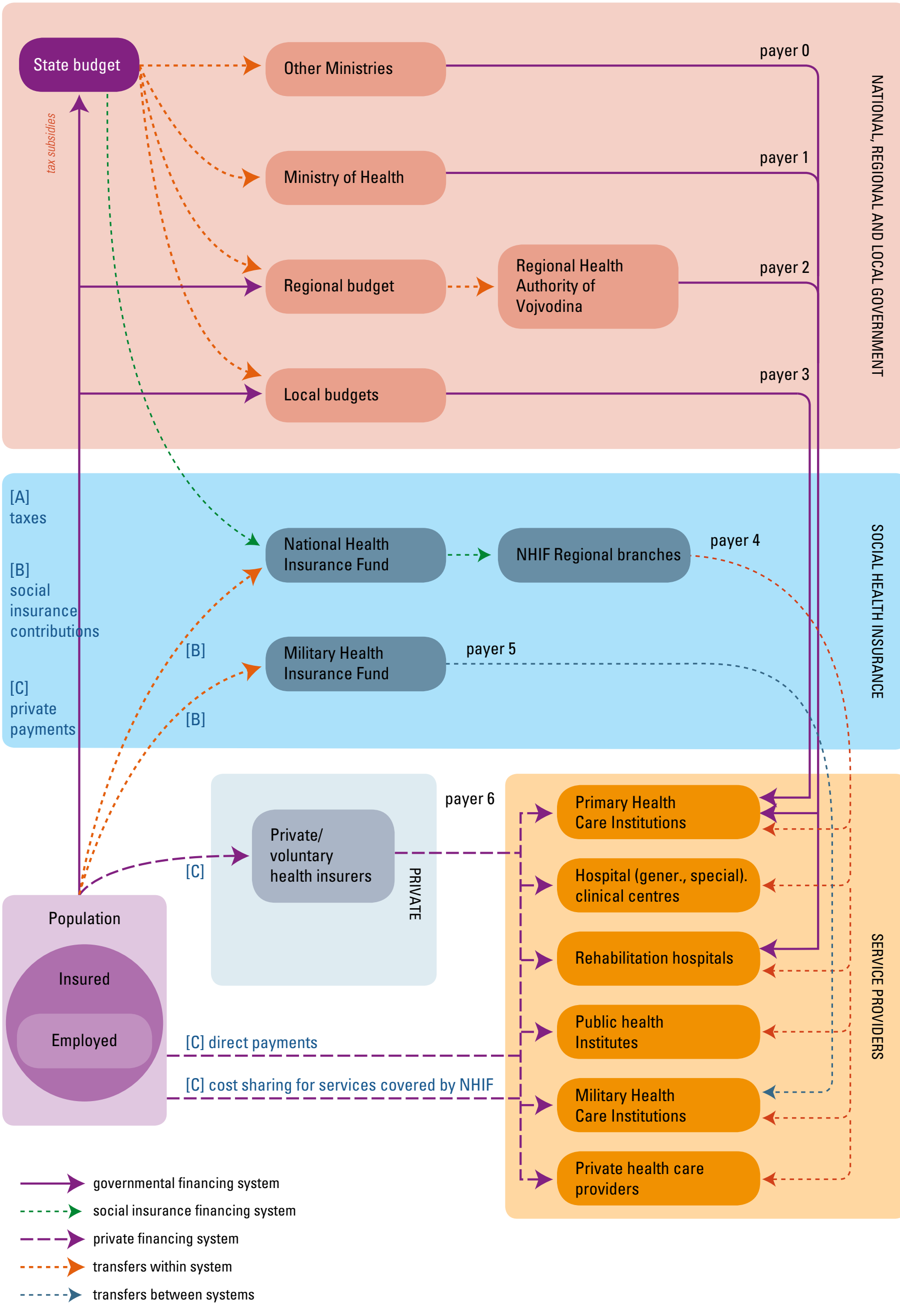
National and local budget revenues mainly cover costs for capital investment, public health programmes, etc. According to the 2017 Budget Law, 40.12% of the Ministry of Health budget was allocated to the development of infrastructure of health institutions, while 7.98% was allocated to preventive programmes (Official Gazette RS 113/2017).

FIGURE 3.4 Percentage of total expenditure on health according to source of revenue, 2017



Source: IPH Batut, 2018d

FIGURE 3.5 Financial flows



NHIF, National Health Insurance Fund

Source: Authors

3.3 **Overview of the statutory financing system**

3.3.1 *Coverage*

BREADTH: WHO IS COVERED?

The main system for population health coverage in Serbia is the compulsory employee/employer based social health insurance that was established by the 1992 Law on Health Care and Law on Health Insurance and operates on the principles of commitment, solidarity and mutuality (Official Gazette, 1992a, 1992b).

The 2019 Law on Health Insurance (Official Gazette, 2019b) designates which groups are responsible for paying a certain percentage of their income to the NHIF as well as who is covered by health insurance. In principle, insurance coverage is provided to all individuals permanently or temporarily residing in Serbia (2019 Health Care Law; Official Gazette, 2019a).

There are 28 categories of insured persons defined in Article 11 of the 2019 Health Insurance Law (all kind of employed persons – public, private, self-employed, farmers, sportsman, priests and pensioners). In addition to the contributing groups, family members and members of the household of a contributing person are entitled to health care coverage. Groups of persons who do not fulfil the conditions for acquiring the status of insured persons and who do not fulfil the conditions to be insured as members of the family of insured persons shall be considered as insured persons. These groups are:

- Children up to 18 years of age, school children and students until the end of statutory schooling, and up to 26 years of age maximum, in compliance with the law.
- Persons requiring family planning services, as well as during pregnancy, childbirth and maternity, up to 12 months after childbirth.
- Persons over 65 years of age.
- Persons with a disability.
- Persons receiving treatment for certain diseases that are defined by a special law regulating the protection of the population from infectious diseases, malignant diseases, diabetes, psychosis,

epilepsy, multiple sclerosis, persons in the terminal phase of chronic renal insufficiency, systemic autoimmune diseases, rheumatic fever, addiction diseases, patients with rare diseases, and persons covered by health care in connection with the transplantation of organs, cells and tissues.

- Monks and nuns.
- Beneficiaries of financial social assistance, or beneficiaries of accommodation in social institutions or other families, or users of special financial compensation for parents, in accordance with the law.
- Beneficiaries of the family disability allowance, according to the regulations on the protection of veterans, military and civilian invalids of war, as well as members of their families if they are not health insured.
- Unemployed persons whose monthly income earnings are below income earnings established in compliance with the law governing health insurance.
- Beneficiaries of cash benefits for family members whose breadwinner is doing military service.
- Persons of Roma ethnicity who, due to their traditional lifestyle, do not have permanent or temporary residence in the Republic.
- Domestic violence victims.
- People trafficking victims.
- Persons to whom the competent authority has established the status of a refugee or exiled person from the former republics of the Socialist Federal Republic of Yugoslavia (SFRY) or the status of a displaced person.
- Victims of terrorism.
- Veterans whom this status is determined in accordance with the regulations on the protection of veterans.

The governmental budget transfers to the NHIF guarantee that health insurance coverage is also provided to the above-mentioned population groups.

According to NHIF data, 6 402 citizens were insured in Serbia out of 7 272 inhabitants (by 31 December 2017), that is, an almost full coverage of the population (98%) (NHIF, 2017c). The total number of insured persons

includes 1 651 (20%) persons whose insurance is financed from the budget of Serbia (NHIF, 2017c). Among the insured citizens, 71% were insurance carriers, while 29% were family members (Table 3.3).

TABLE 3.3 Insured persons in Serbia, 31 December 2017

INSURANCE BASIS	TOTAL NUMBER OF INSURED PERSONS	INSURANCE CARRIERS	FAMILY MEMBERS
Employees	2 675	1 849	1 826
Unemployed who receive compensation	46 323	35 372	10 951
Retired persons	1 002	1 378	210 624
Self-employed	304 503	181 475	123 028
Farmers	204 628	104 709	99 919
Insured from the state budget [a]	1 651	924 532	402 119
Other	167 700	133 922	33 778
Total	**6 402**	**4 237**	**1 245**

Note: [a] Insured from the state budget includes migrants, Roma, unemployed, among others; Voluntary Health Insurance (VHI) is mostly complementary and purchased to cover co-payments. However, there are also VHI packages offered to cover higher standards of care and/or a scope of benefits not included in the basic package provided by compulsory coverage, as well as the full coverage for persons who are not covered by compulsory health insurance

Source: National Health Insurance Fund, 2017c

SCOPE: WHAT IS COVERED?

Compulsory health insurance rights include the right to health care, the right to salary reimbursement during temporary work disability and the right to reimbursement of travel costs related to using health care services (Official Gazette, 2019b).

Compulsory health insurance provides full coverage for the following health services:

1. Measures of prevention and early detection of disease.
2. Examinations and treatment in the case of family planning, biomedical assisted fertilization and frozen embryo transfer, examination and treatment in the case of pregnancy, childbirth

and in the period of 12 months after delivery, including termination of pregnancy for medical reasons.

3. Examination, treatment and rehabilitation in case of disease or injury provided for children, pupils and students up to age 26 for as long as they attend school, or older persons with severe physical or mental disorders.
4. Examination and treatment of oral disease for children, pupils and students up to age 26 for as long as they attend school (except for complications of caries and tooth extraction as a consequence of caries and if they do not respond to preventive measures), older persons with severe physical or mental disorders, women in the case of pregnancy, childbirth and in the period of 12 months after delivery, examination and treatment of the oral diseases within the preoperative and postoperative treatment of malignant diseases of the maxillofacial region and those with congenital or acquired facial deformities.
5. Examinations, treatment and the implementation of measures to prevent spread of HIV infection and other infectious diseases defined by law.
6. Examinations and treatment of malignant diseases, haemophilia, diabetes, psychosis, epilepsy, multiple sclerosis, neuromuscular disorders, cerebral palsy, paraplegia, quadriplegia, chronic renal failure in which dialysis or kidney transplantation is indicated, cystic fibrosis, systemic autoimmune diseases, rheumatic diseases and its complications.
7. Examinations and treatment related to the donation and transplantation of tissues and organs.
8. Examinations, treatment and rehabilitation of injuries at work and occupational diseases.
9. Emergency medical and dental services and ambulance transportation.
10. Medical-technical aids, implants and medical devices.
11. Oxygen concentrator and non-invasive ventilation (NIV).
12. Ocular prosthesis, eyeglasses, contact lenses with diopters ±9 and telescopic glasses.

The 2019 Law on Health Insurance (Official Gazette, 2019b) defines 24 types of health care services which are not covered by compulsory health

insurance. Among others, they include: cosmetic surgical interventions, termination of pregnancy for nonmedical reasons, medical detoxification in the case of acute alcohol or psychoactive substances intoxication, methods and procedures of alternative and complementary medicine, drugs out of the list of drugs, diagnostic and treatment procedures that are in the research or experimental phases, and other types of health services not covered by compulsory health insurance.

DEPTH: HOW MUCH OF BENEFIT COST IS COVERED?

Depending on the type of service, the share taken on by compulsory health insurance for services that are not fully covered ranges from 65% to 95%. For some services, co-payment by insured persons is defined as a fixed amount and varies from 0.5 to 9 euros per service (Table 3.4).

TABLE 3.4 Co-payment fees for health services in Serbia, 2019

TYPE OF HEALTH SERVICE	CO-PAYMENT FEE (EUR)
Inpatient treatment – per hospital day	0.5
Day hospital	0.5
Inpatient rehabilitation – per hospital day	0.5
Examination by “chosen doctor” (except preventive)	0.5
Home visit per day	0.5
Ambulance transportation	0.5–1.5
All laboratory tests requested by “chosen doctor”	0.5
Roentgen examination requested by “chosen doctor”	0.5
Ultrasound examination	1
CT examination	3
PET CT examination	9
MRI examination	6

Other diagnostic services (endoscopy, spirometry, ECG)	0.5
Surgical corrections	5% of price up to 300 EUR
Implants in cardio surgery, vascular surgery and orthopaedic surgery	5% of price up to 300 EUR
Other implants	20% of price up to 300 EUR
Orthopaedic devices and appliances	10–20% of price
Dental visit, examination or denture	10–35% of price
Gender reassignment surgery due to medical indications	35% of price

Note: 1 euro is 119 RSD according to exchange rate at 20 September 2017, so lowest co-payment fee is about half of the euro

Source: Official Gazette, 2019c

3.3.2 *Collection*

The main revenue source for health financing in Serbia are the compulsory health insurance contributions coming from employee's wages and employer's profit. The 2019 Law on Contributions for Compulsory Social Insurance (Official Gazette, 2019d) defines the rate of contributions including the rate for compulsory pension and disability insurance (26%), for mandatory health insurance (10.3%), and for unemployment insurance (0.75%). Contributions for compulsory pension and disability insurance and for unemployment insurance also partially go to the NHIF, through the contributions of the Pension and Disability Fund and the National Service for Employment.

Collection of social contributions for health insurance is under the jurisdiction of the Tax Administration. The collected revenues from social contributions, together with other revenues are pooled in the NHIF account, administered by the State Treasury.

General taxation is non-earmarked revenue. The central budget tax revenue includes revenue from Individual Income Tax, Corporate Income Tax, Value Added Tax, Excise Tax and Customs Duty, which are collected by the Tax Administration of the Republic of Serbia. Municipal budget tax revenue is accumulated from local taxes and is collected by the municipalities. The amount of the tax revenue allocated for health both nationally and at the municipality level is not fixed but is defined annually by national and local parliaments.

BOX 3.1 Is health financing fair?

The Serbian health system is based on the principles of equity and solidarity and is predominantly financed by compulsory social insurance contributions.

The role of the National Health Insurance Fund (NHIF), as a state agency which collects contributions (see section 2.3), is to make the health system equal for every citizen, regardless of their status, but in practice this is not always the case. Wage-based health insurance contributions from employers, employees, and the self-employed represented the largest share of the NHIF income in 2018 (64.04%), followed by contributions from the pension and disability insurance fund (21.46%) and revenues from the state budget (12.39%), while other revenues made up 2.11% of the total NHIF income (NHIF, 2019b). In 2017, approximately 6.9 million of individuals were insured. Among them, health insurance for 20% of persons has been financed from the budget of Serbia (NHIF, 2017c).

The fiscal burden on wages in the period 2001 to 2006 can be best described as proportional, and slightly progressive in the period since 2007. Income tax represents one quarter of the fiscal burden, while the remaining three quarters are contributions to compulsory social insurance. Contribution rates for pension and disability insurance are 26%, for health insurance, 10.3%, and for unemployed insurance, 1.5%. The minimum contribution base in Serbia equals 35% of the average salary, while the maximum contribution base is five times the average monthly salary.

Concerning the fact that all insured people exercise the same rights to health care services, there is an implicit progressive redistribution of income; that is, those with higher salaries subsidize health care for those with lower salaries (Altiparmakov, 2013; Government of Serbia, 2017b). The expansion of the sources of financing refers to the introduction of the so-called “tobacco dinar”; that is, money that went into the Ministry of Health budget for every sold cigarette pack. These funds were spent on health promotion and disease prevention activities advocating against cigarette smoking as well as for diagnostics and treatment of cardiovascular and malignant diseases (Simic, 2012). Earmarking of revenues from tobacco products that had been established in 2005 was cancelled in 2012 (Farrington et al., 2018).

3.3.3 *Pooling and allocation of funds*

ALLOCATION FROM COLLECTION AGENCIES TO POOLING AGENCIES

The main pooling mechanism is represented by the NHIF which is responsible for pooling of collected revenues from social contributions, together with other revenues. The NHIF is a sole provider of compulsory health insurance.

The Ministry of Finance has its role in the pooling of funds and allocation of money to the Ministry of Health and other ministries according to the yearly law on the budget (Official Gazette, 2018d).

Within each annual financial plan, the NHIF defines a maximum overall spending on health services by compulsory health insurance contributions for the upcoming year. The prospectively determined annual NHIF budget for health services is defined according to current and future macroeconomic conditions, such as expected growth of GDP, rate of inflation, expected growth of wages and pensions and the rate of unemployment; that is, those indicators that influence the amount of contributions paid by insured individuals and other revenues of the NHIF.

The NHIF financial plan for 2019 defines the overall revenue/spend on health care as 2.23 billion euros, and this plan is mostly based on previous expenditures (NHIF, 2018g). The NHIF financial plan is adopted by the Managing Board of the NHIF and approved by the National Assembly.

ALLOCATING RESOURCES TO PURCHASERS

The basic purchaser of health services in Serbia is the NHIF with its organizational units (Provincial Health Insurance Fund and branch and sub-branch offices established for the territory of a municipality, city or district). The Rulebook on the Contracting of Health Care from Compulsory Health Insurance with Health Care Service Providers, adopted each year (NHIF, 2018h), defines the conditions for making a contract for the provision of health care from compulsory health insurance to insured persons for the upcoming year between the NHIF and providers of health services (health institutions, private practice and other legal entities), criteria for determining the remuneration for their work; that is, the manner of payment of health services and other costs in accordance with the law, the final settlement

procedure with the providers of health services, the deadlines in which they will conclude contracts and other issues of importance for the process of contracting.

3.3.4 *Purchasing and purchaser-provider relations*

The health care provider may conclude a contract with the NHIF if it meets the requirements for performing a health care activity defined by the Rulebook on Detailed Conditions for Performing Health Care Activities in Health Institutions and Other Forms of Health Care Services (Official Gazette, 2006c). The health care provider, in order to conclude a contract, submits to the NHIF or its Branch Office an offer or plan of work for the upcoming year. To be eligible to make a contract with the NHIF, the health care providers have to receive the approval of their plan from the regional IPHs.

The type and scope of health services that are presented in the offer or the workplan are based on a general act that identifies the health care plan from compulsory health insurance for upcoming year adopted by the NHIF.

A contract with a health care provider that is not included in the Health Care Institution Network Plan may be concluded in accordance with the law regulating public procurement (Official Gazette, 2012a) or by sending a public call for contract conclusion with all providers of health services that meet the defined conditions for the provision of health services that are the subject of the contract.

3.4 Out-of-pocket payments

OOP payments are the most dominant private source of expenditure. OOP payments are mainly direct outlay by individuals, including gratuities and in-kind payments to health practitioners and suppliers. OOP payments are also used to finance services purchased in military facilities by the civilian population when services are not covered by the NHIF.

The 2018 Household Budget Survey determined that 4.4% of household revenue was spent as OOP expenditure on health in 2017 (SIPRU, 2018). It does not provide information on which percentage of this amount comprises OOP user fees and which percentage comprises informal payments.

According to the 2013 National Health Survey (IPH Batut, 2014b), in the 12 months preceding the Survey, 51.6% of the total population had expenditures for health care. Over half of these payments for health care were for medications (Table 3.5).

TABLE 3.5 Share of certain types of health expenditures in total OOP payments, 2013

TYPE OF HEALTH SERVICES	SHARE IN TOTAL OOP (%)
Outpatient services (public)	2.1
Outpatient services (private)	3.9
Dental services (public)	2.0
Dental services (private)	14.2
Diagnostic services (public)	2.8
Diagnostic services (private)	8.0
Payments for drugs (total)	55.6
Other expenses	11.4

Source: IPH Batut, 2014b

3.4.1 *Cost-sharing (user charges)*

Cost-sharing in Serbia occurs in the form of co-payments, through which patients are charged a fixed amount or the percentage remaining up to the total price of health care services. In this scheme, patients formally share a part of the cost burden and the NHIF covers the remainder of the utilization fee. Depending on the specific type of services, the share taken on by compulsory health insurance for services that are not fully covered ranges from 65% to 100%. Although these fees are low, extensive exemptions are applied for vulnerable population groups (see below) and, in practice, it was estimated that exemptions applied up to 50–60% of the population.

The 2019 Health Insurance Law (Official Gazette, 2019b) defines co-payments of up to 35% of the price of health care services. The NHIF stipulated in the by-law on content and scope of health benefits from

obligatory health insurance and co-payment fees for 2019 (Official Gazette, 2019c) that the co-payment fee is charged by the provider after the provision of health services. The amounts of co-payment fees for health services in Serbia are presented in Table 3.4.

The amount of co-payments by an insured person in a calendar year may not exceed half of the monthly salary or half of the pension of the insured, paid to the insured in the last month in the calendar year (Official Gazette, 2019c). For insured persons with no salary or pension (e.g. unemployed), the highest annual amount of co-payment is determined by the amount of half of the average of the net earnings in Serbia paid in the last month of the calendar year.

The highest annual amount of co-payments shall not include the co-payments paid for implants, medical devices, and co-payments for drugs defined as a percentage of prices from the Drug List (Official Gazette, 2019c).

Certain categories of citizens are exempt from co-payments for medical services (e.g. examination by the "chosen doctors", drugs for which a fixed fee of 0.5 euros applies, laboratory analysis, rehabilitation, percentage share of the cost of implants, medical-technical equipment, etc.). Payments are exempted for disabled veterans, civilian war invalids, blind persons and permanently handicapped persons, blood donors who donated blood 10 or more times (permanently exempted), except for drugs from the Positive List and medical devices. Payments are also exempted for people who have donated blood fewer than 10 times in 12 months after a blood donation. Co-payments are also exempt for other vulnerable groups such as the unemployed, refugees, displaced and exiled persons, persons over 65 years of age with no actual right to retirement and the Roma population. In addition to these categories, all citizens and their families whose monthly income does not exceed the prescribed threshold for exemption from co-payments are also exempted (Official Gazette, 2019c).

3.4.2 *Direct payments*

Direct payments in the Serbian health system include payments for:

- medical examinations in order to determine health status, physical impairment and disability for the exercise of certain rights with other bodies and organizations (for insurance companies, Courts,

criminal and pre-trial proceedings, for issuing certificates for drivers of motor vehicles, determining the health competence on the proposal of the employer, measures related to safety and health at work, etc.), except for examinations as instructed by professional medical authorities;

- medical examinations required for the enrolment in high school, college, university and courses, for obtaining health certificates to start to work;
- personal comfort and special accommodation and personal care in hospital inpatient facilities which are medically unnecessary or provided on personal request;
- health service for detoxification in acute drunkenness and acute use of psychoactive substances;
- cosmetic procedures aiming to improve appearance without restoring body functions;
- pregnancy termination for nonmedical reasons;
- dental services not included under the mandatory health insurance;
- medicines which are not on the Drug List;
- other kind of health care services not established as entitlements deriving from compulsory health insurance.

A significant amount of direct payments targets the growing private health sector. Since 1989, dentists have been allowed to open private offices and since 1992, primary, secondary and tertiary care physicians and pharmacists have been allowed to open private practices.

3.4.3 *Informal payments*

The scope of informal payments in Serbia is difficult to ascertain as they are illegal and largely unreported. The results of the National Health Survey from 2013 show that in the 12 months preceding the Survey, health services were directly paid for by 0.1% of the population, who incurred costs for health care, while 0.7% of the population paid the health care staff on their own initiative (IPH Batut, 2014b). However, only a small number of respondents answered the questions about direct payments to health care staff for health services. In addition, there is indicative information that more than one third (34.5%) of the population of Serbia refused to pay for a health service upon

request of the health care staff, with a large percentage of such persons in southern and eastern Serbia (50.9%) compared with Vojvodina and Belgrade (25.5% and 25.1%, respectively) (ACAS, 2012).

From the report of the Anti-corruption Agency of the Republic of Serbia (ACAS, 2012) on Forms, Causes and Risks of Corruption in the health system it arises that the fields of risk of corruption are public procurement, doctor's supplementary work, spending funds, receiving gifts, conflict of interest, waiting lists, relationships between pharmaceutical companies and doctors, and the process of employment in health institutions. The cause of these risks was lack of system laws that regulate these issues.

The new Strategy for the Prevention and Fight Against Corruption (2013) for the period 2013–2018 (Official Gazette, 2013k) and its Action Plan have both a structural approach covering issues such as good governance, independent institutions, internal control and external audit, and protection of whistleblowers, and a sector approach addressing corruption in most sensitive sectors such as public procurement, spatial planning, judiciary, police, education and health. A specific focus was on a cross-sectoral approach, the principle of participation, knowledge transfer and "zero tolerance" to corruption.

3.5 Voluntary health insurance

3.5.1 *Market role and size*

According to the 2019 Law on Health Insurance (Official Gazette, 2019b), Voluntary Health Insurance (VHI) is health insurance that covers faster access to care and enhanced consumer choice of provider and amenities (supplementary market role); insurance covering the costs of health care, that is, health services, medicines, medical devices, user charges, etc., which are not covered by compulsory health insurance (complementary market role); insurance of citizens not insured under compulsory health insurance (substitutive market role).

VHI is being contracted as long-term insurance for a period which cannot be less than 12 months from the date of beginning the insurance. VHI is organized and carried out by the NHIF and insurance companies dealing with insurance activities in accordance with the 2008 Decree on

Voluntary Health Insurance (Official Gazette, 2008), as well as by the investment funds for VHI, in accordance with the 2014 Law on Insurance (Official Gazette, 2014e). Upon a proposal of the Minister of Health, the government regulates the types of VHI, the conditions, the manner and procedures of organizing and implementing VHI.

NHIF offers VHI in order to enable citizens, under the best conditions, to enjoy rights that are not covered by the compulsory/mandatory health insurance (Official Gazette, 2019b). There are also several private insurance companies.

3.5.2 *Market structure*

VHI in Serbia is offered by the NHIF and 12 insurance companies (including three that only offer travel health insurance) (National Bank of Serbia, 2019a). In 2018, the total premium for VHI amounted to 3.5% of all insurance premiums, the largest share since VHI was introduced. Among the insurance companies, the largest market players are Generali, Uniqa and Wiener Statdische. Most of their clients are corporate clients who contract this type of insurance for their employees (about 70%), while the rest are individuals who contract VHI for themselves and their family members (EY, 2016).

However, the VHI market in Serbia is still at a very low level of development. One of the barriers is the low information level of the population about VHI models. It is argued that VHI is quite expensive and something that only a small number of people can afford (EY, 2016).

3.5.3 *Market conduct*

In order to sign contracts with insurance companies, health care providers have to reach certain standards in the provision of health services, including the quality of services provided and satisfaction of clients. The major part of contracted VHI services are outpatient services (around 70% of contracted risk coverages), while inpatient services cover about 30% of all contracted policies (EY, 2016). Other health services (examinations, physical therapy, dental care, medicines) can be included in any VHI package.

3.5.4 *Public policy*

Regulation of VHI (Official Gazette, 2008) defines that the Ministry of Health issues opinions on the fulfilment of the conditions for organizing and performing a specific type of VHI. Along with the Ministry of Health, the National Bank of Serbia (NBS) is also responsible for health insurance. The NBS, upon the positive opinion of the Ministry of Health, issues licenses to insurance companies.

3.6 **Other financing**

In addition to the NHIF, there are other sources of public financing. It has already been mentioned that funds are transferred to the NHIF from the governmental budget for insurance coverage of vulnerable population groups, including social welfare beneficiaries, the long-term unemployed, the older population as well as the young and internally displaced persons (IDPs) and refugees.

3.6.1 *Parallel health systems*

The Ministry of Defence operates a parallel health insurance fund which enables military personnel to receive services in military health facilities; that is, military health centres, military hospitals and the Military Medical Academy (MMA). The military health insurance fund covers soldiers, veterans and their families. Due to a surplus of MMA capacity after the break up of the former Yugoslavia and the shortage of services and hospital beds in some medical disciplines of the public health sector (see section 2.1), the NHIF contracts with the MMA for those services. In 2008, the MMA has been included in the Health Care Institution Network Plan with part of its capacities (500 beds) and, since then, has expanded the offer to the civil sector for additional health care plans and comprehensive benefit packages and has concluded contracts for business and technical cooperation with public and private companies, sports clubs and others.

3.6.2 *External sources of funds*

External sources of funding have been received in the form of in-kind donations, capital expense coverage and human capacity training programmes through bilateral and multilateral donor agencies as well as loans from regional and international development banks.

Initially (since 2000), the focus of international donors' aid was on emergency assistance to address a crisis in the health sector, in particular, critical shortages in key medicines and medical supplies (ECHO, 2003). This was followed by programmes designed to help rebuild some of the health sector infrastructure (e.g. hospitals), but since 2002 there has also been a continuous emphasis on supporting institutional reform of the health system. All this was done through the EAR Health cards programme (from 2000 to 2008).

In 2008, the Serbian Government signed the financing agreement with the European Commission related to the Instrument of Pre-Accession (IPA) assistance.

International donors include the EU, through the European Agency for Reconstruction (EAR) (now the European Delegation), the Global Fund to Fight AIDS and Tuberculosis, World Bank, the Canadian International Development Agency (CIDA), the World Health Organization, UNICEF, the International Red Cross and a number of bilateral donors – Norway, China and Japan, being the most important.

Since 2000, more than 50 projects have been implemented in the health sector with the financial and technical support of external agencies. These projects have been directed towards the promotion of primary care, the reconstruction of general hospitals, providing equipment to health institutions, the reform of health insurance funding, the promotion of drugs management policy, the development of the basic health services package, and the introduction of a new model of payments for health workers – primarily, the introduction of capitation payments and the development of integrated IT systems in health care.

3.7 **Payment mechanisms**

3.7.1 *Paying for health services*

Funding for health care remains input-oriented, largely based on line-item budgets for all health care providers, except pharmacies, rehabilitation hospitals and the Institutes of Public Health.

In order to be paid for the provision of health services, the health care provider concludes a contract with the NHIF. The conditions for contracting are defined by the 2006 Rulebook on Detailed Conditions for Performing Health Care Activities in Health Institutions and Other Forms of Health Care Services (Official Gazette, 2006c). Table 3.6 summarizes provider payment mechanisms.

Health care providers include public and private institutions. Public health institutions are organized through the Network of Health Care Institutions. The Decree on the Health Care Institution Network Plan (Official Gazette, 2006b) determines: the number, structure and capacities according to the territorial distribution for all state health care institutions. NHIF concludes contracts on providing health services with public health institutions that are included in the financial plan of the NHIF for a period of 1 year.

Health institutions submit annual workplans to the NHIF, in accordance with the methodology defined by IPH Batut. The annual workplan of each institution consists of several parts (the plan of health services to be provided, number of staff that will provide these services, medicines, medical supplies, etc.). The health institutions are obliged to send an electronic invoice to the NHIF. The invoiced amount is calculated on the basis of the actual number of provided services during the year and the price list determined by the NHIF.

PRIMARY CARE

NHIF payments to providers of health services in primary care are based on line-item budgets (payments for salaries for contracted employees, costs for medicines and medical supplies, energy costs).

The capitation-based payment system is a relatively new payment method which has been partially introduced (see section 6.1.6). The payment

is related to the number of patients registered with a doctor. In addition, performance indicators of efficiency and quality of care are used. Teams of doctors and nurses are also rewarded for the performance of certain preventive examinations (such as pap tests with gynaecologists in primary care).

The calculation of health workers' salaries is regulated by the 2013 Labour Act and the Regulation on Coefficients for Calculation and Payment of Salaries of Public Employees. In general, salaries are established by application of a coefficient for education, which can be increased by a degree of expertise (e.g. specialist, primarius) or academic degrees (Master's, PhD). In addition, work experience counts for 0.4% per year of experience. Furthermore, there are supplements for shiftwork, weekend duty, overtime and fieldwork (e.g. home visits). The capitation formula contains the following four elements: the number of registered patients, and the degree of rationality in prescribing drugs, efficiency, and preventive services. In rural areas a correction coefficient is applied to the number of registered patients. In preparation for the new funding scheme, the Rules on the Conditions, Criteria and Standards for the Conclusion of Contracts with Providers of Health Services were amended in 2009, with incentives added for doctor and nurse teams to stimulate registration of patients with a "chosen doctor".

DENTAL HEALTH SERVICES

The health institutions providing dental services are paid by line-item budgets (for salaries, medicines and medical supplies, and for material and other costs).

PHARMACY

The contract with the pharmacy from the Network Plan is concluded for the purpose of supplying insured persons with medicines from the Drug List and certain types of medical supplies that can be prescribed and issued under compulsory health insurance. The remuneration for pharmacies includes the price of the medicines achieved in the centralized public procurement procedure implemented by the NHIF, the costs for retail (for the prescribed medicines) in the amount of 12% (except for the treatment of HIV infection

and hepatitis B which retail costs are 6%), price of medical supplies achieved in the centralized public procurement procedure implemented by the NHIF including retail costs of 4% (NHIF, 2018h).

HEALTH CARE INSTITUTIONS AT THE SECONDARY AND TERTIARY LEVEL OF CARE

Payment to health care providers at the secondary and tertiary level of care (except for rehabilitation hospitals) is based on line-item budgets (payments for salaries for contracted employees, costs for medicines and medical supplies, for material and other costs, costs of energy, costs of implants (for orthopaedics, cardio surgery, ophthalmology, etc.), fees for blood and labile blood products, fees for dialysis supplies and medicines for dialysis, costs of drugs for haemophilia medication, costs of cytostatic drugs, and fees for nutrition in a health institution).

As of 1 January 2019, in the public hospitals in Serbia, the compensation to health institutions for secondary and tertiary levels of health care based on DRGs' performances and quality indicators has been introduced. Currently, the payment based on DRGs' performances and quality indicators amounts to 5% of the overall budget of each hospital as enforced in 2018 (NHIF, 2018h).

REHABILITATION HOSPITALS

Payment of rehabilitation hospitals/special hospitals for rehabilitation is based on the number of bed days and FFS for ambulatory/outpatient services.

INSTITUTES OF PUBLIC HEALTH

The IPHs are paid for services provided, depending on the types of services and sources of financing. In the domain of microbiology, parasitology and virology, they are paid by the NHIF based on FFS. The activities related to compulsory immunization and other activities in the area of social medicine and epidemiology are defined as programmes, and are paid by the NHIF. For services in the area of public health microbiology, communicable and

noncommunicable diseases prevention and control, health promotion, health informatics and biostatistics and health services planning and organization, the Institutes of Public Health provide the programmes of general interest under the annual contracts with the Ministry of Health. These programmes are defined by the 2019 Law on Health Care (Official Gazette, 2019a).

In the domain of sanitary microbiology and ecotoxicology (a discipline combining methods of ecology and toxicology in studying the effects of toxic substances), public health institutes have to compete on the market with other public and private institutions to provide these kind of services.

HEALTH CARE IN SOCIAL CARE INSTITUTIONS

Payment for health care services provided by social care institutions is based on line-item budgets that include payments for salaries for predefined staff, according to norms defined by the Ministry of Health (Official Gazette, 2006c), and for medicines and medical supplies.

TABLE 3.6 Provider payment mechanisms in Serbia, 2019

PROVIDER	PAYMENT MECHANISM
Primary care	Line-item budget/capitation/FFS
Hospitals	Line-item budget/DRGs/FFS
• Rehabilitation hospitals	Bed days/FFS
• Institutes of Public Health	FFS/programmes
• Social care institutions	Line-item budget

Note: FFS, fee-for-service; DRG, Diagnostic-related group

Source: Authors

3.7.2 *Paying health workers*

Health workers in Serbian health institutions are paid by salaries. The calculation of health workers' salaries is regulated by the Labour Act (Official Gazette, 2005f) and the Decree on Coefficients for Calculation and Payment

of Salaries of Public Employees (Official Gazette, 2001b). Salaries of all professionals employed in health institutions (doctors, nurses and midwives, dentists and dental auxiliaries, pharmacists, other health workers and non-medical staff) are established by application of a coefficient for education, which can be increased by a degree of expertise (e.g. specialist) or academic degrees (Master's, PhD). In addition, work experience counts for 0.4% per year of experience. Furthermore, there are supplements for shiftwork, weekend duty, overtime and fieldwork (EY, 2016).

Since October 2012, a new model for payment of health workers based on capitation has been introduced in primary care institutions in Serbia (Official Gazette, 2011a). It represents a combination of fixed salary (which is a major part) and a much smaller part that is variable and performance based. The capitation-based payment is applied to "chosen doctors" (GPs, paediatricians, gynaecologists, and childrens' and preventive dentists). The variable part of the salaries of nurses that are in a team with a "chosen doctor" is based on "chosen doctor's" performance and is calculated as the same percentage as for the "chosen doctor". The variable part of salaries of other employees in primary care institutions that provide services of "chosen doctors" is calculated based on the average performance of the "chosen doctors" (Official Gazette, 2011a).

The capitation formula (variable part of salary) contains the following four elements: the number of registered patients, efficiency, diagnostic-therapeutic procedures and the quality of health care. The corrective coefficient is applied in relation to the age of the patients and the population density. The variable part of the salary cannot overcome 8.08%.

The average salary in the health sector in Serbia in September 2018 was 565 euros per month, which was in line with the total average salary in the country, but 70–80% lower than in financing, insurance and ICT sectors (SORS, 2019).

In order to reduce these differences, the Serbian Government decided to increase the salaries in public health institutions from January 2019 onwards. The salaries were increased by 10% for doctors, dentist, and pharmacists, 12% for nurses and 7% for other employees (Government of the Republic of Serbia, 2019).

The new payment system, in which a portion of the salaries for primary care teams will be directly linked to performance based on 10 quality indicators, will be introduced in 2020. The Ministry of Health and the Health

Unions have come to an agreement that all further salary increases in the health sector would count towards the variable or performance-based portion of the salary (World Bank, 2018c). Further monitoring, evaluation and upgrading of the financing formula is of utmost importance for the success of this reform; and the regulatory framework need updating to recognize and allow for such changes.

4

Physical and human resources

Summary

- In 2016, there were 355 health care institutions in the public sector in Serbia. Of these, 79% of inpatient care institutions were dedicated to acute care. In 2016, there were 462 curative beds per 100 000 population. However, the introduction of the DRG system is expected to improve the performance of acute hospitals.

- International projects have been key to improve the technical condition and the level of equipment of health care institutions, as part of the 2003 health care reform. Significant investments have been made in diagnostic imaging technologies, but, despite this, their density per population in Serbia is still lagging behind their density in many neighbouring countries.

- Initiatives for e-health are promoted by the government, which include e-prescriptions, e-referrals and a system of electronic patient records. The use of IT in health care is increasing, but integration of IT into the national health information systems has not been completed.

- The number of physicians and nurses per 100 000 inhabitants increased from 1991 (212 and 431, respectively) to 2016 (302 and 605, respectively), but these rates are substantially lower than the EU average (339 and 756, respectively).

- Serbia currently does not have an official health workforce strategy. The current policy aims to maintain present staffing levels in the system, despite the shortage of some specialists, unequal geographical distribution of medical workers across the country and high unemployment.

- There is evidence of high intention to work abroad, although information on workforce migration trends is lacking.

4.1 Physical resources

4.1.1 *Infrastructure, capital stock and investments*

INFRASTRUCTURE

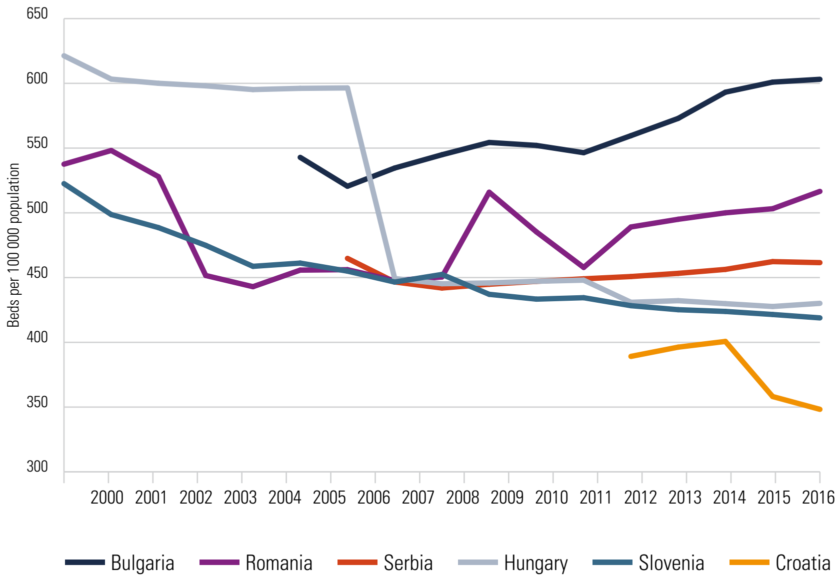
In 2016, 127 health institutions provided inpatient care in the public sector (IPH Batut, 2017d). Those institutions included: 41 general hospitals, 35 special hospitals, 19 inpatient departments in primary care centres, 16 inpatient departments in institutes, six inpatient departments in clinics, four clinical–hospital centres, four clinical centres and two institutes (*zavodi*). These institutions had, in total, 41 788 hospital beds, including 1 874 beds in day hospitals, dialysis and neonatology beds (IPH Batut, 2017d). The current number of beds is 15.9% lower than it was in 1990 (IPH Batut, 2018a).

In the period 1990–2016, the highest decrease in the number of hospital beds was recorded during the public health care sector reform (2003–2006), which encompassed the implementation of hospital care restructuring projects as envisaged by the strategy and the Action Plan of the health care sector reform (see section 6.1). The number of hospital beds was cut by 5.1% in 2003/2004, by 3.0% in 2004/2005, and by 4.3% in 2005/2006 (calculated according to IPH Batut (2018a) electronic data). Some increases in hospital bed rates per population were probably the mixed effects of a decrease in population size and incomplete/inappropriate reporting on the number of beds (some institutions/departments had delays in reporting or were counting beds in physicians' offices).

Fig. 4.1 illustrates that the number of acute beds in hospitals in Serbia fell by around 16% between 1990 and 2016. In 2016, there were 461.5 acute

beds per 100 000 population, which is higher than in neighbouring countries such as Slovenia (418.8) and Croatia (348.26) but fewer than in Romania (516.6) and Bulgaria (603.1) (Eurostat, 2019).

FIGURE 4.1 Curative care beds in hospitals per 100 000 population in Serbia and selected countries, 2000–2016



Source: Eurostat, 2019.

The largest share of beds (excluding day hospitals beds) are in general hospitals (15 509 beds; 38.9%), special hospitals (8 442; 21.2%) and clinical centres (7 445; 18.7%) (IPH Batut, 2017d). The remaining types of institutions in the public sector have a share of 10% or less of all hospital beds.

In 2016, almost half of the current bed capacity in the public sector (55%) was mainly used to manage acute diseases and conditions. These beds were located in internal medicine (12 198; 30.6%) and surgery (9 743; 24.4%) departments (IPH Batut, 2017d). One third of beds were distributed in long-term care departments, such as rehabilitation (6 217; 15.6%) and psychiatry (5 393; 13.5%). The remaining beds were located in gynaecology (3 432; 8.6%), paediatrics (2 830; 7.0%) and other departments (101; 0.3%) (IPH Batut, 2017d).

CURRENT CAPITAL STOCK

The major provider of health care services in Serbia is the Ministry of Health, through a wide network of public health care institutions ("Network" hereafter) established under the Decree on the Health Care Institution Network Plan (Official Gazette, 2006b) and excluding institutions from Kosovo and Metohija Province. In this Network, there are 351 public health care institutions and four military medical institutions, which are contracted to the National Health Insurance Fund (NHIF) to provide health care services. The territorial distribution of health care institutions in the Network is uneven (IPH Batut, 2017d). Population coverage is smaller in Vojvodina, than in central Serbia, that is, there is no clinical–hospital centre in Vojvodina, while there are four of them in central Serbia, all located in Belgrade.

In addition to the Network, other ministries (e.g. defence, justice, etc.) govern their own health care institutions which provide primary care and hospital care services for specific population groups.

Most hospitals in the public sector date from the 1980s. Appraisals of the condition and performance of public health care institutions feed into planning future strategies and investments, including through international assistance projects. The reconstruction of four clinical centres has been initiated in 2006.

REGULATION OF CAPITAL INVESTMENT

Capital investments in the health system are financed to a large extent from the state budget, the budget of the autonomous province and the local self-governance budget (at the municipality level), as well as from funds, donations and loans (mainly the World Bank and the European Investment Bank, but also bilateral donations of some governments). Within the process of accreditation, the state and private health care institutions are obliged to provide strategic plans containing details about capital investments within specific objectives dedicated to the improvement of the delivery of health services.

The Ministry of Health is responsible for capital investments based on the 2019 Health Care Law and the 2009 Law on the Budget System,

including controls of acquisitions in cooperation with the Ministry of Finance and the Ministry of Public Administration and Local Self-Government. According to the Law on the Budget System (Official Gazette, 2009b), each health institution is responsible to submit and the NHIF the short-term and medium-term goals of their financial plans to the Ministry of Health, including a plan of public procurement of capital investments for a period of 3 consecutive years to be included in the fiscal policy of the government. The process of purchasing/procurement capital investments is regulated by the 2012 Law on Public Procurement (Official Gazette, 2012a). Private health care institutions do not have such obligations and predominantly base their capital investments on the market and health needs assessment.

The Ministry of Health follows the 2006 Plan of the Health Institutions' Network to oversee the geographical distribution and the right balance across different levels of care.

INVESTMENT FUNDING

Capital investment in health care is determined at the central level by the Ministry of Health and funded from government funds and international agencies. For example, from 2003, the World Bank approved loans totalling just under 80 million dollars for restructuring and modernization in health care (EY, 2016). The level of capital investments ranged between 2% (in 2003) and 3.8% (in 2017) of total health expenditure (THE) (IPH Batut, 2018c). In 2014, although the level of capital investments as a share of THE was the highest ever since (3.99%), it was still below the average level of capital investments for the countries of south-eastern Europe (5.55% of THE) (WHO, 2019).

According to the list of projects in the health sector in the period 1995–2012 (Ministry of Health, 2017b, 2017c), the most important external donor was the EU with over 380 million euros, mainly through credits for a range of services (technical support, assessments, medicines, medical devices, equipment, etc.), for hospitals, emergency, blood transfusion and pharmaceutical sector, public health and preventive services, health information system, health insurance fund, and Ministry of Health. Assistance was also provided by UNICEF, the Canadian International Development Agency (CIDA), the Swedish International Development Agency (SIDA), Ireland,

Norway, Japan, Switzerland, Netherlands, France, The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFTAM), the United States Agency for International Development (USAID), while over US$ 31 million credit came from the World Bank for improving the energy efficiency of Serbian health institutions and for delivery of improved services at the local level.

More recently, the Second Serbia Health Project 2018–2021 (P129539, commitment amount US$ 40 million) aims to facilitate the improvement of the efficiency and quality of the public health system by strengthening: (1) health financing, purchasing, and maintenance systems; and (2) quality improvement systems and management of selected priority noncommunicable diseases (Official Gazette 2014d, 2018a; World Bank, 2017, 2018a). Through its four components, the project is currently financing goods and equipment, and supports upgrading of information technology capacity to improve financial reporting and performance monitoring at central, hospital and primary levels.

PUBLIC–PRIVATE PARTNERSHIPS

As part of the 2003 health reform (see section 6.1), the Ministry of Health has defined its role in the control and registration of the private sector as well as on the control of expensive health technologies (Official Gazette, 2005a). In addition to the Law on Public–Private Partnership and Concessions (Official Gazette, 2011c), there is a manual for implementation of public–private partnerships for local government (Cvetković & Sredojevic, 2013). Most public–private partnership projects were developed for the economic development of infrastructure in various settings (Vlaskovic et al., 2018).

4.1.2 *Medical equipment*

REGULATION OF MEDICAL DEVICES AND AIDS

According to the 2019 Health Care Law, it is the responsibility of the state, autonomous province, municipality or city to provide funds for the construction and equipping of state-owned health institutions, which include: capital investment, investment for maintenance of premises, medical and nonmedical equipment and means of transport, or procurement of medical

and other equipment necessary for the operation of health institutions and means of transport, as well as the procurement of equipment for the development of an integrated health information system, and for other obligations determined by law and the founding act (Official Gazette 2019a, Articles 8 and 15).

EQUIPMENT INFRASTRUCTURE

The Ministry of Health estimates the national needs for expensive medical equipment and capital investments, sets criteria, prepares national investments plans and tender procedures, and approves costs. Through the health budget, the Ministry of Health covers the needs of the health care institutions in the Network for expensive medical equipment and capital investments. In addition, investments in other, non-expensive medical equipment are the responsibility of the owner of the particular health care facility. Despite significant investments, Serbia is still behind the EU average regarding diagnostic imaging technologies (Table 4.1), which may partially contribute to longer waiting times (IPH Batut, 2017g).

TABLE 4.1 Diagnostic equipment in Serbia and the EU, per 100 000 population, 2017

	SERBIA	EU AVERAGE
Computed tomography scanners	0.96	2.2
Magnetic resonance imaging units	0.31	1.4

Source: Eurostat, 2019; IPH Batut, 2017b

4.1.3 *Information technology and e-Health*

In 2018, 73% of households in Serbia used and had access to the Internet, well below the EU countries average (89%), or the highest ranked country, Iceland (99%) (Eurostat, 2019). A 2016 Statistical Office of Serbia survey showed that Internet connections were more available in the capital (73.1%), than in Vojvodina (68.7%) and central Serbia (57.9%), and more in urban (72.5%) than in rural areas (53.8%) (Kovacevic, Pavlovic & Sutic, 2016).

The 2016 National Statistical Office survey on the usage of information and communication technologies found that 71.7% of respondents were searching the Internet for health-related information (e.g. injuries, illness, nutrition, health improvement, etc.), but only 7.9% had used it for making an appointment with physicians via hospital/health centre websites (Kovacevic, Pavlovic & Sutic, 2016).

In line with the 2006–2010 Strategy for the Development of an Information Society, in 2006 the Ministry of Health adopted the Programme of Operation, Development and Organization of Integrated Health Information System – e-Health – for the period 2009–2015 (Official Gazette, 2009f). Within this programme there are two strategies, 2006–2009 and 2010–2020. This programme enhanced the development of the concept of patient-centred care and the rational use of resources by enabling the usage of information and communication technologies (IT) for automated communication, monitoring and evaluation of all administrative procedures and processes which accompany the main activities of the health system. In 2012, the Ministry of Health, using EU/IPA funds and with WHO support (administrative and logistic support was by provided by UNOPS), started to implement a 2.5 million euro Integrated Health Information System (EU-IHIS) project (Bošković, 2015). This 5-year project (2010–2015) aims to implement a health information systems (HIS) in 19 selected hospitals throughout Serbia and to introduce the use of electronic health records. The project's aims are (https://www.mojdoktor.gov.rs/about) to:

- provide patients with lifelong electronic health records;
- enable health providers to record and easily access health care-related data;
- establish gathering of information that can be used to optimize and improve performance of Serbian hospitals and the health system;
- assist in the establishment of a sustainable IT backbone for the Serbian health system.

At the beginning of September 2016, the Ministry of Health informed all health institutions that they are obliged to enter and update their data in the IHIS (Ministry of Health, 2016), which is a modern Internet portal that serves to centralize the collection and use of resource data (i.e., data on the institution and data on employees) and the codes used in the health system (EU-IHIS, 2014).

Electronic health insurance cards for all health insurance users were also introduced. These efforts have integrated the primary care IT systems with hospital care facilities for the purpose of establishing an appointment booking system; however, the e-prescription system is not yet functioning, there are no connections between hospitals, no e-referrals in biochemical laboratories and the data monitored varies among inpatient facilities. It is expected that these problems will be solved in the future and that paper medical records of patients in the health centres, and in hospitals with history of illness, as well as all reports (specialist reports, laboratory results, radiological digital images, letters of discharge, etc.) will be completely replaced by electronic health records (EHRs) (EU-IHIS, 2014).

4.2 Human resources

4.2.1 *Planning and registration of human resources*

The 2019 Health Care Law stipulates that health care providers cannot carry out independent work until they complete their internship and pass the professional exam. An internship for health workers with a university degree lasts 12 months, except for medical doctors whose basic integrated studies of medicine for a period of 6 years in a faculty of medicine require an internship which lasts 6 months. The next step is the registration within the appropriate Chamber, which issues licenses and holds an electronic database of all licensed health workers.

Continuing education accredited by the Health Council of Serbia is a condition for periodic re-licensing (each fifth year). According to the 2019 Health Care Law, each state and private health institution is responsible for providing favourable circumstances for continuing the professional development of their health workers, including specialization, sub-specialization and continuing education, based on the institutional plan developed by the Professional Council.

Higher education is based on the Bologna Declaration, which Serbia has signed and fully implemented, including mutual recognition of academic degrees. Within the preparation for the EU accession, the Ministry of Health, in cooperation with educational institutions and the Ministry responsible for education, recognizes professional qualifications according

to Directive 2005/36/EC and 2013/55/EU on the recognition of professional qualifications and Regulation (EU) No. 1024/2012 on administrative cooperation through the Internal Market Information System (European Parliament and Council, 2013).

At the national level, the Ministry of Health develops a plan of the number of health professionals in health institutions based on the Network Plan (Official Gazette, 2006b), which comprises the employees covered by the individual health plans of health institutions. The plan of continuing professional development of personnel includes (as specified in the 2019 Health Care Law): the programme of professional training of health workers and health care associates; the number of specializations and subspecializations that are approved on an annual basis; criteria and closer conditions for approving specializations and subspecializations; and other issues of relevance for the professional development of health workers and health care associates.

The public sector is the major employer of health workers in Serbia. There is official information about the number and distribution of employed physical persons in the public health care sector; however, there are no estimates about the total number of full-time equivalent staff or full data on the size of the workforce (practising, active (that is, licensed for practice may not be employed, therefore not practising), etc.) and their distribution (age, sex, urban/rural level and district) in private and other sectors than the public health care sector. Information on the trends in workforce migration is not available, although research provides evidence on high intention to work abroad (Šantrić-Milicevic et al., 2014, 2015b; Gacevic et al., 2018).

Serbia does not have an official health workforce strategy. The current health workforce policy (Official Gazette, 2015b) aims to maintain the present staffing levels in the health system, while reversing the shortage of some specialists by allowing voluntary (self-financed) specializations (Ministry of Health, 2015) as well as offering permanent jobs for the best graduates of medical faculties. However, there is no official health workforce strategy.

4.2.2 *Trends in the health workforce*

Table 4.2 presents rates of the main categories of the health workforce per 100 000 population in the public sector in the period 1991–2016. In the public network in 2016, the rates of physicians and nurses/midwives were

302 and 641 per 100 000 inhabitants, respectively, with a ratio of physicians to nurses/midwives being 1:2.1 (IPH Batut, 2018a).

There were two cycles of rationalization (in 2005/2006 and 2007) as part of the health sector reform (see section 6.1). As of 2014, the government imposed a maximum number of posts per type of health institution. The last national health workforce strategy in Serbia was for the period 2006–2010.

TABLE 4.2 Health workers in the public sector per 100 000 population, 1991–2016 (selected years)

HEALTH WORKERS	1991	1998	2002	2005	2010	2016
Medical doctors non-specialists (including residents on specialization)	83	74	71	79	98	92
Specialist physicians	153	177	196	196	204	210
Dentists	51	46	45	45	32	26
Pharmacists	31	23	25	27	30	31
Nursing professionals (including paediatric nurses)	431	470	519	558	591	605
Midwives	33	34	37	35	36	36
Health technicians	216	215	243	225	216	205

Note: Data refer to physical persons, licensed, active, and practising in the Network

Source: Rate of health workers per 100 000 population are calculated according to data of IPH Batut (IPH Batut, 1992, 1999, 2003, 2017d, 2017h) and mid-term population estimates (SORS, 2017b)

Recent research showed inequity in the district distribution of health care staff (Šantrić-Milicevic et al., 2015a). The medical workforce tends to be allocated in urban areas with better infrastructure and concentrated within medical universities and highly specialized medical centres. In 2015, the variation of the medical workforce density at district level versus the national average rates was most prominent for general medical professionals on specializations, and for midwifery professionals (–59%; +62%) (Šantrić-Milicevic et al., 2015a). The highest difference between district rates was for midwifery professionals and medical doctors on specializations (3.6:1) (Šantrić-Milicevic et al., 2015a). The lowest difference between district rates was for nursing professionals (1.8:1) and health technicians (1.9:1). In 2015, female workers were 76.7% of all workers, while staff younger than 35 years comprise 26.9% of all workers (Šantrić-Milicevic et al., 2015a).

PHYSICIANS

In 2016, physicians made up 19.3% of the total personnel in the Network (out of these, 14.3% were medical specialists). In 2016, 65% of the total number of physicians were female (IPH Batut, 2017h). In 2015, the average age of permanently employed physicians (94.4% of all physicians) was 47.42 years, while it was 33.97 years for those with temporary employment (IPH Batut, 2017h).

Nearly half of physicians in the Network (49.6%) worked in hospitals in 2015 (IPH Batut, 2017h), which was below the average for the EU (56.8% in 2014) (WHO, 2016a). In 2015, the 10 leading specializations were in the field of internal medicine (13.3%), paediatrics (11.3%), general medicine (11.1%), obstetrics and gynaecologists (7.6%). Anaesthesiologists, radiologists and general surgery comprised about 5% each, physical medicine 3.8%, while psychiatry and urgent medicine, about 3% each (IPH Batut, 2017d).

There is no family medicine specialization in Serbia. Instead of a family medicine doctor, in 2005, a "chosen doctor" was introduced to act as a "gatekeeper" in a team with nurses at the primary health care centre (*Dom zdravlja*). According to the current Health Care Law (Official Gazette, 2019a), a patient aged over 19 is obliged to choose their own general practitioner (that is, the non-specialist doctor, the general medicine specialist, or the occupational medicine specialist) and dental medicine doctor, while women additionally must choose one gynaecologist. Children, through their parents or their school, must choose their own paediatricians (Official Gazette, 2019a).

A total of 6 416 "chosen doctors" were working in primary care centres in Serbia in 2017 (NHIF, 2017c). This is the total number of "chosen doctors" that provide health care services in the field of general medicine, for the protection of women's health, children, youth and dental health. This number equals to approximately 0.91 "chosen doctors" per 1 000 population (calculated according to population data from SORS (2017a), and data on "chosen doctors" taken from the NHIF (2017c)).

Since 1991, the rate of physicians per 100 000 population has been steadily increasing, to 295.44 in 2016. This was below the EU average (360.98 in 2016) and above other neighbouring countries such as Croatia, Bulgaria and Slovenia (see Fig. 4.3). However, comparative data on workforce

numbers by country suffer from significant differences in the way in which these figures are recorded, the major differences being whether the private sector is included and whether those working in other sectors are included.

In 2014, Serbia ranked among the top five countries in central and south-eastern Europe for the number of physicians and nurses per 100 000, and this figure was above the average for SEEHN countries, but significantly below the average for the WHO European Region and the EU average (Fig. 4.2).

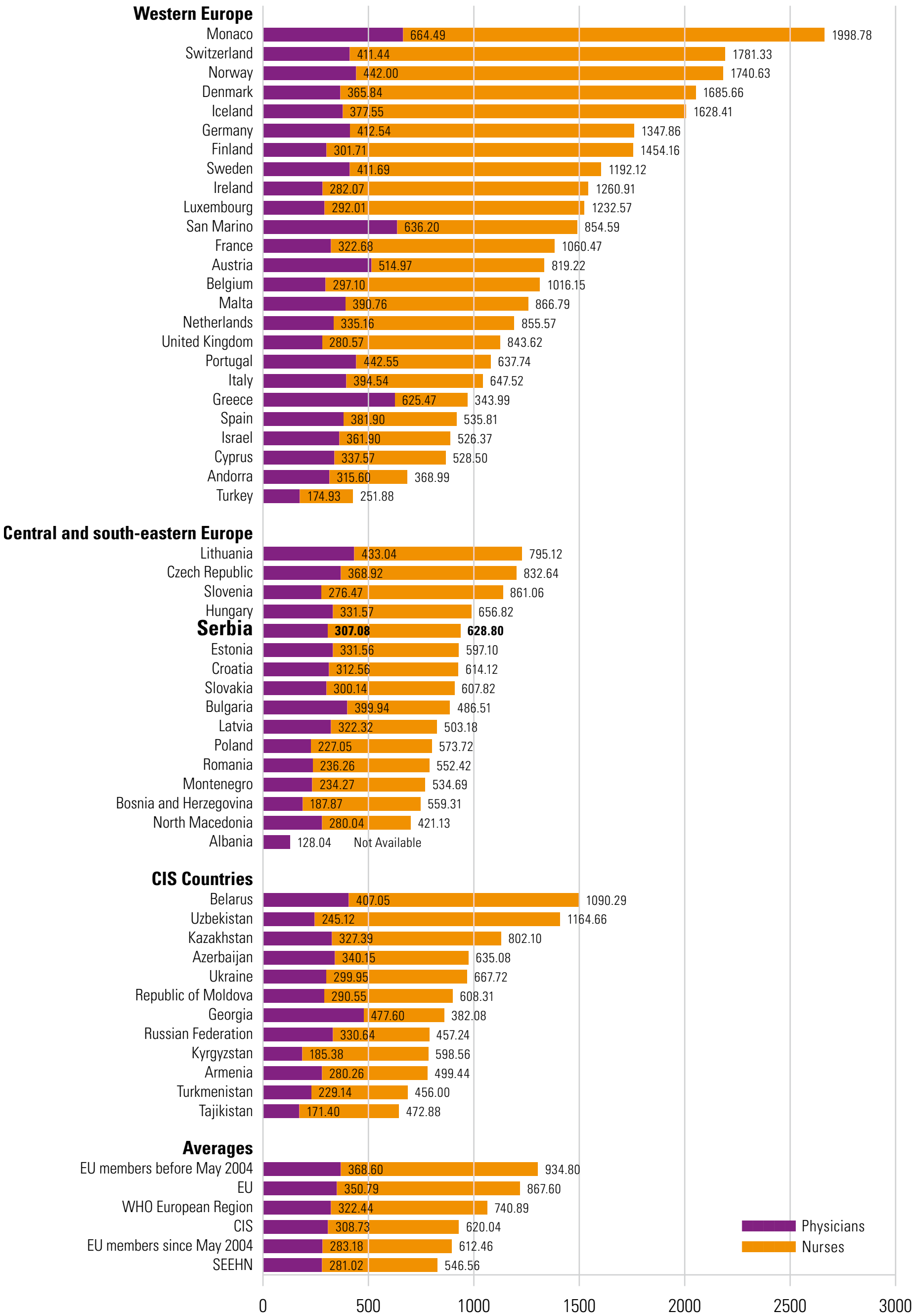
The situation for physicians in Serbia is characterized by contradictions: over 2 000 physicians are unemployed (mainly young professionals), and there is a shortage of specialists (surgeons, anaesthesiologists, reanimatology and intensive therapy; radiation oncologists; otorhinolaryngologists, etc.), as well as an unequal geographical distribution (Ministry of Health, 2015).

NURSES

The share of nurses in the public network increased to 37.1% in 2016, amounting to 605 per 100 000 population (Table 4.2). In 2016, about 13% of of the total number of nurses in the Network had college degrees and the rest were nurses with secondary education. Further, 96% of college nurses were general nurses, 3% were midwives and less than 0.5% were paediatric nurses; 87.0% of all nurses were females and 31% were aged below 35 years (IPH Batut, 2017h). According to the Serbian Nurse and Health Technician Chamber's data, the number of licensed nurses and midwives was 78 517 in 2015, out of which 89.4% were working in the public sector (Chamber of Nurses and Health Technician of Serbia, 2017).

For 2016 (the latest year of available data for international comparisons), the number of nurses per 100 000 population in Serbia (634.9) was lower than the EU average (864.4) (see Fig. 4.2), and below neighbouring countries such as Hungary (660.14), Croatia (673.37) and Romania (682.85) (see Fig. 4.4). In 2014, 61.2% of all nurses were employed in public hospitals which is in line with the EU average of 61.3%, but higher than the SEEHN countries average of 57.4% (WHO, 2016a). However, as noted above, comparative data on workforce numbers by country suffer from differences in the way in which these figures are recorded.

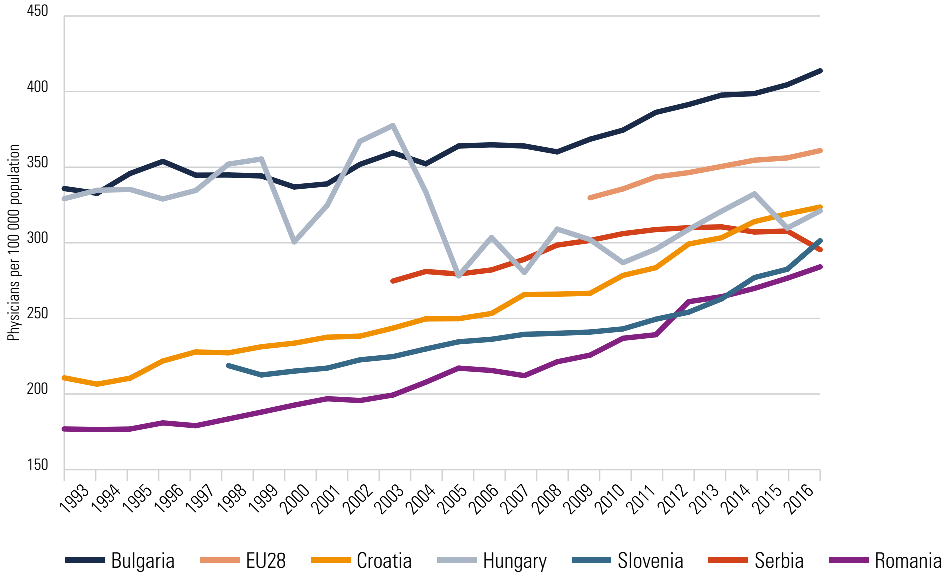
FIGURE 4.2 Practising nurses and physicians per 100 000 population, 2014



Note: CIS, Commonwealth of Independent States; SEEHN, South-eastern Europe Health Network

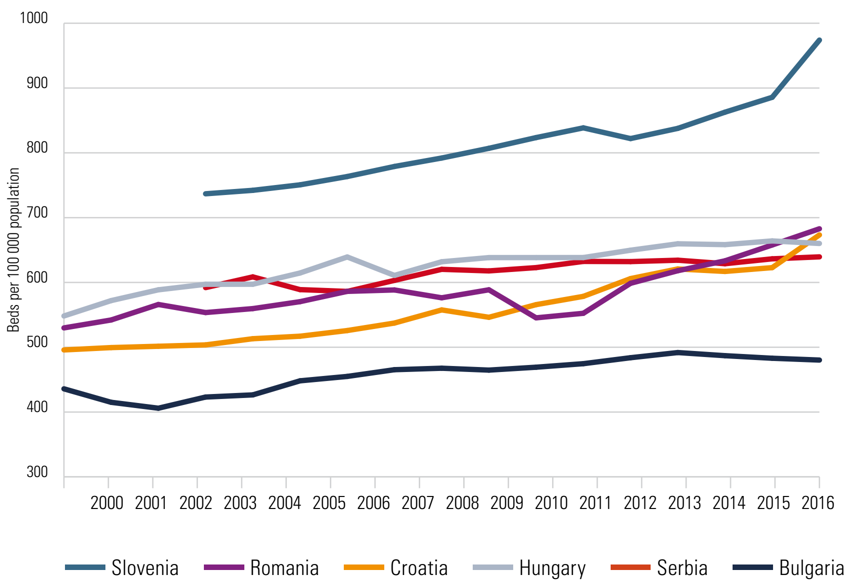
Source: WHO, 2019

FIGURE 4.3 Number of physicians per 100 000 population in Serbia and selected countries, 1995–2016



Source: Eurostat, 2019

FIGURE 4.4 Number of nurses per 100 000 population in Serbia and selected countries, 2000–2016



Note: Nurses and midwives (practising)

Source: Eurostat, 2019

4.2.3 *Professional mobility of health workers*

Health workforce mobility in Serbia is not monitored in such a way to provide a precise set of indicators on annual net inflow and outflow of health professionals. There is no professional authority that organizes and records the mobility of health workers in Serbia. The country has not implemented the 2010 WHO Global Code of Practice on the International Recruitment of Health Personnel (WHO, 2010a) that requires the establishment of a national authority for organizing and recording the mobility of health care workers. However, there are other sources of information such as research studies, or health professional records and employment offices, none of which is providing comprehensive or reliable information.

According to a study from 2006, 10 000 health professionals were working abroad that year, mostly in Germany and Switzerland (Djikanovic, 2006), while 3% were in Hungary and less than 3% worked in other countries (e.g. United Kingdom, Norway, Australia, Netherlands, Slovenia, Libya, United Arab Emirates, etc.) (Djikanovic, 2006).

The registered unemployment rate of health workers (20%) was higher than the average for the country (NES, 2017). Half of the unemployed workers are young health professionals. In January 2017, the National Employment Service registered 24 376 unemployed health workers; of which 77.5% were females. The majority are medical doctors, nurses and health technicians (18 455), dentists (3 483) and pharmacists (2 438).

Data on potential leavers from the health sector is available from the health professional chambers, measured by the number of persons requesting Certificates of Good Standing. A health professional requires this certificate to apply to work or continue professional education abroad. The percentage of licensed professionals that have requested Certificates of Good Standing from their health professional chambers was: 1.2% of licensed biochemists in the period 2009–2016, 0.6% dentists in 2016, and 3.04% of licensed physicians in 2017 (Chamber of Biochemists of Serbia, 2017; Chamber of Dentists of Serbia 2017; Medical Chamber of the Republic of Serbia, 2017). However, neither the Chamber of Nurses and Health Technicians of Serbia nor the Chamber of Pharmacists of the Republic of Serbia have data on workers' migration. These data provide only a partial picture of the situation, as the data does not show whether health care professionals have actually migrated and does not include those health workers who have decided to work in countries outside Serbia.

To work abroad, Serbian physicians are usually required to pass the recognition and equivalence assessment (nostrification) procedure whereas, according to the *acquis communautaire,* health professionals who are EU citizens may use a general system for the recognition of higher education diplomas (European Parliament and Council of the European Union, 2013).

Most Serbian nursing categories are not recognized in the EU because they do not qualify for consideration under Directive 2005/36/EC (European Parliament and Council of the European Union, 2013) for several reasons, mostly because of the degree and competencies acquired during schooling as well as topics covered and number of practical hours during schooling. Since most Serbian nurses do not hold a higher education degree, they mostly migrate to work in nursing homes for older people and rehabilitation centres in Italy, the United Kingdom, Australia, Canada and Switzerland, though there is no data on this.

A 2016 survey indicated that 29.1% of employees would not change their workplace in the Network during the next 5 years, while 6.9% would leave the health system, 3.7% would work in the private health sector, and 14.7% intend to go abroad for work (Horozovic, 2016). A recent study demonstrated that 22.6% of the respondents to a 2015 survey of employees in the Network were dissatisfied with their jobs in the Network, 11.7% reported dual practice, and 14.3% had an intention to work abroad (Gacevic et al., 2018). Physicians and nurses younger than 55 years of age from a tertiary health care institution and males were more likely to be dissatisfied than other workers. Poor management and working conditions increased job dissatisfaction, with increased odds for dual practice and intention to work abroad by 1.5 and 3.6 times, respectively (Gacevic et al., 2018).

High intention to work abroad is also clear among students: 81% of 931 medical students (84% of fifth-year students and 78% of first-year students) reported a high intention of working abroad (Šantrić-Milicevic et al., 2014) and in a sample of 719 nurse graduates, 70% of college nurses and 66% of specialist nurses reported a high intention to work abroad (Šantrić-Milicevic et al., 2015b).

4.2.4 *Training of health personnel*

After primary school (8 years), and secondary school, with 4 year programmes (gymnasiums and vocational medical schools), there are three

stages in the tertiary training of health professionals: undergraduate medical education (at college or university), postgraduate medical education (specialist, sub-specialist, Master's or doctoral studies) and continual professional education (CPD).

The duration of secondary (middle) medical education for a nurse, midwife and health technician qualification is 4 years. Studies at the college last 2 years (120 credits ECTS equivalents); 3 years – specialist studies (180 credits ECTS equivalents) – for a title of higher nurse, midwife and health technician.

As of 2000, the higher education institutions in Serbia follow the European trends of reforms and harmonization in the field of higher education known as the Bologna Process. Considerable reforms have been launched since Serbia signed the Bologna Declaration in September 2003. The current Law on Higher Education (Official Gazette, 2017a) is in line with Bologna Process action lines and the Lisbon Convention, and it adopts the three-cycle structure prescribed by the Law on Higher Education of Serbia (Official Gazette, 2017a) to be established in all university higher education institutions. The implementation of the Bologna Process was formally in place since the academic year 2006/2007. At university level, the duration of tertiary level studies can be (Official Gazette, 2013d):

- 3 years (180 credits ECTS equivalents) for health professionals (e.g. basic studies in oral hygiene);
- 1 to 3 years (60–180 credits ECTS equivalents) of specialists' professional studies for higher educated nurses and physiotherapists;
- 4 years of basic academic studies in nursing – bachelor (240 credits ECTS equivalents);
- 5 years of integrated studies in pharmacy (300 credits ECTS equivalents);
- 6 years of integrated studies in medicine and dentistry (360 credits ECTS equivalents);
- 1 year of specialist academic studies (60 credits ECTS equivalents);
- 1 year of specialist professional studies (60 credits ECTS equivalents);
- 1 year of Master's studies (60 credits ECTS equivalents);
- 3-year PhD studies (180 credits ECTS equivalents);

- 3 to 6 years of health specialization studies in one of 70 disciplines for medical doctors, doctors of dentistry and pharmacists; and
- 1 year of sub-specialization studies for specialist medical doctors/ doctors of dentistry/ pharmacists.

Health associates (e.g. physicists, biologists, etc.) can specialize in one of 17 postgraduate training programmes offered which last 3 years (Official Gazette, 2013d) or take a Master's or PhD in Public Health (e.g. accredited and organized at the Faculty of Medicine, University of Belgrade) or Health Management (e.g. accredited and organized as a joint study programme by the Faculty of Medicine and the Faculty of Organizational Sciences, University of Belgrade).

All health science graduates must complete an internship at a health institution that fulfil certain criteria obliged by the Rulebook on Internship and Professional Exams for Health Workers and Associates (Official Gazette, 2006d). As well as the final exam, diploma, doctors have to pass the state (professional) exam in order to obtain a certificate for professional qualification. That exam consists of two parts (knowledge on health system and health care skills) and is carried out by the special Commission at the Ministry of Health. Health workers need to register to a Chamber for a license, before they apply at the National Employment Office for a vacant post.

The governing bodies for university education in health sciences are the National Council for Higher Education (NCHE, 2018), which is elected by the parliament, the Commission for Accreditation and Quality Assurance (whose members are elected by the National Council for Higher Education), and the Conference of Universities, which consists of the rectors and vice rectors of all universities (Official Gazette, 2017a). Individual faculties, by the Law on Higher Education (Official Gazette, 2017a), may act as legal body, which means that the concept of a fully integrated university has still not been embraced. However, the university is given certain integrative functions and some of these are: strategic planning, the adoption of study programmes, quality assurance and control, and enrolment policy.

Serbia operates an integrated national quality assurance system complying with the Standards and Guidelines for Quality Assurance in the European Higher Education Area. The Commission for Accreditation and Quality Assessment (CAQA) is legally responsible for organizing and

monitoring the quality assurance scheme for all higher education institutions in Serbia. CAQA was established (in June 2006) as an independent expert body of the National Council for Higher Education. CAQA designs standards, protocols and guidelines for the National Council for Higher Education's approval and helps institutions in creating their respective quality management systems.

4.2.5 *Physicians' career paths*

Health workers in Serbia can have professional, academic or managerial careers paths. These paths are not separate for some practising health workers. They may advance professionally by undergoing specialist training, Master's or PhD training (which entails the assumption of more responsibilities) or by being promoted to managerial positions. For example, nurses and midwives may be promoted to chief nurse or midwife in a ward, part of a ward, or in a hospital. The professional, the managerial and, to a certain extent, the academic career paths have a general regulatory framework based on the 2019 Health Care Law (Official Gazette, 2019a). Special rules apply to teachers and researchers at institutions of higher education and at research institutes (academic path). The academic career path is regulated in detail by the Law on Higher Education (Official Gazette, 2017a), but the scale of the various positions is contained in the Statutory Act of each faculty.

Access to training is determined by the management of the health facility where the physician works. The Professional Council of a health care institution proposes the plan for professional development, for which funds are covered by the employers (Official Gazette, 2019a). Decisions about promotions at work are made at the local level and the director of the facility has an important role in granting promotions. Professional development is monitored at the institutional level, while the Ministry of Health each year approves the number of specializations for health care institutions in the Network.

4.2.6 *Other health workers' career paths*

At present, registered nurses, regardless of their educational background, are entitled to take specialist, Master's or PhD training courses. As of 2010, the Rulebook for the List of Vocational, Academic and Scientific Titles determines the different qualifications for nurses: vocational nurse, the college nurse, the nurse graduated in nursing organization, specialist vocational nurse, Master's of nursing, Master's of nursing organization and PhD in nursing. Nurses and midwives with Bachelor's and Master's degrees specializing in health care management can apply for managerial posts (senior nurse/midwife, chief nurse/midwife, directors of public nurseries).

5

Provision of services

Summary

- Health services are provided through a wide network of health institutions. The most important institutions for public health at the regional level are the Institutes of Public Health (IPHs). Their work is coordinated at the national level by the Institute of Public Health of Serbia "Dr Milan Jovanović Batut".

- Health care is organized at three levels: primary, secondary and tertiary. Health care at the primary level is provided by the state-owned network of primary care centres. Primary care is publicly provided by a "chosen doctor" (who is either a medical doctor, a dentist or a specialist in general medicine, occupational medicine, paediatrics, or gynaecology), with patients assigned according to the area they live in.

- The "chosen doctor" acts as a gatekeeper and refers the patient to secondary care (outpatient or inpatient care) if the primary health care centre is unable to provide adequate care. High-quality diagnostic and curative services are provided by the tertiary level of care, which is closely interconnected with primary and secondary care.

- Emergency care is organized within two functionally linked sub-systems: prehospital emergency care and inpatient emergency care. Average waiting times in the Accident and Emergency units was 11 minutes in 2017 (IPH Batut, 2018a).

- The 2019 Health Care Law also regulates pharmaceutical services together with the 2019 Health Insurance Law and the 2010 Law on Medicines and Medical Devices. In 2016, domestic manufacturers held 38% of the market share.

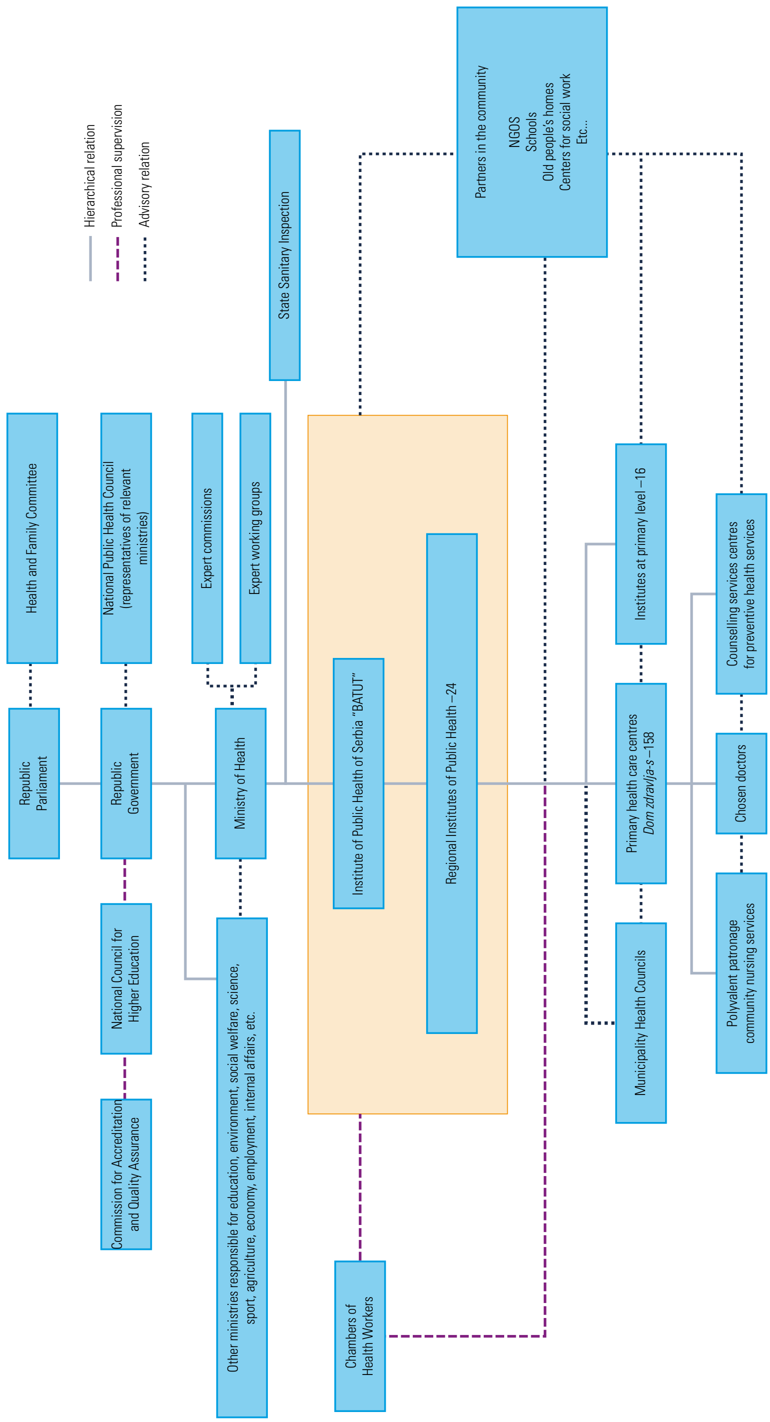
- Long-term care and palliative services are provided to a large degree by family members and private organizations. The Ministry of Health established a Commission for Palliative Care in 2004, which created the 2009 National Strategy for Palliative Care and a 2009 Action Plan for its implementation. For mental health care there are five special psychiatric hospitals with 3 250 beds. A Law on the Protection of Persons with Mental Disabilities was passed in 2013.

5.1 Public health

Public health services are provided through a wide network of public health institutions organized at different levels (Fig. 5.1).

The 25 Institutes of Public Health (IPHs) (including the National Institute of Public Health of Serbia "Dr Milan Jovanović Batut") are organized at the national, district and city level. Their task is to coordinate the whole field of public health and to participate directly in health promotion, disease prevention and protection of the environment. Primary care centres, which are responsible for the work at the local level, also have a significant role in public health (see section 5.3). Inspection services are a prominent part of public health services (that is, health care, sanitary inspection, communal inspection, market inspection and veterinary care), as well as institutions for education – especially faculties, colleges and secondary schools for health professionals and other relevant profiles, then, primary schools, preschool institutions and social care institutions.

FIGURE 5.1 Organizational structure of the system of public health in Serbia



Sources: Compiled from the Health Care Law (Official Gazette 25/2019), Decree on the Plan of the Health Institutions' Network (Official Gazette 42/2006, 119/2007, 84/2008, 71/2009, 85/2009, 24/2010, 6/2012, 37/2012, 8/2014, 92/2015, 111/2017 and 114/2017), and Public Health Law (Official Gazette of 15/2016)

The public health workforce in Serbia includes a variety of employees. IPH Batut (the national level) employs 231 employees at different positions, while the network of 24 IPHs (at the provincial and regional level) employs 2 485 workers (IPH Batut, 2016a) (Table 5.1).

TABLE 5.1 The network and employees of the Network of Institutes of Public Health

ORGANIZATIONAL UNIT	NUMBER OF EMPLOYEES	%
Centres for health promotion	87	3.5
Centres for analysis, planning and organization of health care & centres for informatics and biostatistics	217	8.7
Centres for disease control and prevention	314	12.6
Centres for hygiene and human ecology	743	29.9
Centres for microbiology	503	20.2
Health management and support personnel	621	25.0
Total	**2 485**	**100**

Source: Official Gazette, 2016c

The Public Health Strategy (2018–2025), adopted in August 2018 (Official Gazette, 2018b), identifies seven public health priorities:

1. Improving health and reducing health inequalities.
2. Improving the environment and working conditions.
3. Preventing and combating major diseases and health risks for the population.
4. Developing actions to promote health in the community.
5. Supporting the development of accessible, high-quality and efficient health care.
6. Developing the system of public health based on evidence from research.
7. Improving leadership, communication and partnership for the implementation of the approach “Health in All Policies”.

5.1.1 *Environmental and communicable disease control function*

At the national level, three institutions are in charge of communicable disease control: the Ministry of Health, the State Sanitary Inspectorate (SSI), and the IPH Batut. The Ministry of Health supervises implementation through the SSI, which in turn assesses and controls the performance of the competent institutions through regional services. The IPH Batut takes responsibility for communicable diseases through the Centre for Disease Control and Prevention, which is an organizational unit of IPH Batut (IPH Batut, 2014a).

In Serbia, the primary diagnostic testing service is performed by 61 microbiology laboratories. Diagnostic microbiology laboratories are located at 25 general hospitals, 24 regional IPHs, and 13 tertiary care centres and institutes. In major urban centres, private laboratories also provide these services.

5.1.2 *Mechanisms for notification and surveillance of disease outbreaks*

Under the 2016 Law on Protection of the Population from Communicable Diseases, confirmed cases of over 50 communicable diseases must be reported on a daily basis. These reports are sent to the IPH network, and then to IPH Batut, which publishes a report each year. In the case of an outbreak, IPH Batut provides a report each day. The list of diseases and health events required to be reported at EU level are fully covered (European Commission, 2012). Routine active surveillance and aggregated reporting is complemented by urgent case-based reporting for defined diseases of public health importance. There are two additional parallel surveillance systems – one for TB and the other for HIV – and a sentinel surveillance system for influenza. Key national disease programmes for HIV and TB have been established as well as the National Programme of Antimicrobial Resistance (AMR) surveillance, supported by the Ministry of Health and coordinated by the IPH Batut.

Serbian laboratories are able to detect and confirm 75% of EU-notifiable communicable diseases according to EU case definitions. National reference laboratories for TB, HIV, influenza, measles, poliomyelitis, and AMR actively participate in laboratory surveillance networks and projects led by WHO or the European Centre for Disease Prevention and Control (ECDC).

5.1.3 *Mechanisms for surveillance of the population's health and well-being*

The surveillance of the population's health and well-being is the responsibility of the Ministry of Health, while the IPH Batut is in charge of organizing the National Health Survey to monitor health determinants, health status, lifestyles, functional capabilities, the utilization of health care and health care costs (IPH Batut, 2007, 2014b). Other surveys such as the Global Youth Tobacco Survey (GYTS), the European School Survey Project on Alcohol and Other Drugs (ESPAD), the Multiple Indicator Cluster Survey (MICS), the Survey on Income and Living Conditions (SILC), the European System of Integrated Social Protection Statistics (ESSPROS database), the Mapping of Social Care Services within the Mandate of Local Governments, serve for surveillance of the population's health and well-being (see section 2.6).

5.1.4 *The organization of occupational health services*

Occupational health services in Serbia are regulated by the 2019 Health Care Law and the 2005 Law on Safety and Health at Work. In addition, several documents (strategies, programmes, bylaws) of national importance refer to health protection of the working population. The most important is the Strategy for Safety and Health at Work of Serbia which was adopted for the period 2013–2017 and is pending renewal (Official Gazette RS 100/2013). The overall objective of the Strategy is to promote and maintain the health of the active able-bodied population, and/or to promote working conditions to prevent injuries at work and work-related and occupational diseases and minimizing and/or eliminating professional risks. Governance of health services related to occupational health is the responsibility of the Ministry of Health. In addition, some health and safety services are the responsibility of the Ministry of Labour, Employment, Veteran and Social Affairs.

5.1.5 *The organization of preventive services*

Primary care centres (158 *domova zdravlja*) are predominantly responsible for the delivery of preventive services. "Chosen doctors" target their population

with preventive services each year in attempts to accomplish the goals established by the 2017 Health Care Plan from Compulsory Health Insurance.

As well as the regular work with the population over 19 years of age, the “chosen GP”, performs preventive services within the preventive centres. Preventive centres are functional forms that have been established in *Dom zdravlja-s* since 2005 within the project of the Ministry of Health and the European Agency for Reconstruction (Improving Preventive Health Services in Serbia). As well as health promotion and health education activities, “chosen GPs” perform other preventive activities for the adult population in those centres: immunization when necessary, control of blood sugar, cholesterol and triglycerides, anthropometric measurements, risk assessment for diabetes and other diseases (particularly cardiovascular diseases, malignant neoplasm and depression), clinical examination and breast examination in women. Some of the preventive centres have well-established mobile units for delivery of preventive services in the community.

“Chosen gynaecologists” are responsible for preventive services among women of reproductive age, including counselling for family planning, antenatal care during pregnancy and postnatal, maternity care, and screening.

As well as their regular work, “chosen paediatricians” perform preventive services (e.g. immunization and early disease detection), and they work in two counselling services (preschool children and youth).

The health care sector has formulated a number of strategies and projects to improve the accessibility of preventive health services and the overall health status of vulnerable groups, especially the Roma population. A particularly successful initiative has involved hiring Roma health mediators assigned to multidisciplinary teams of primary care centres which conduct home visits in 59 towns and municipalities in Serbia. All of the 75 mediators so far are female, live in Roma settlements, have children of their own, and have finished elementary school at least. Their task is to be a link between the Roma community and health institutions, but they also provide assistance and advice in other areas relating to education and social protection in order to cope with the numerous difficulties faced by the Roma, especially the children (Dinkić & Branković, 2011). Significant progress in access to primary health care services has been recorded for Roma children in qualitative studies conducted by NGOs (Praxis, 2011).

The most prominent preventive services, and those which have been carried out for the longest period, are within the national programme for immunization. Paediatricians are fully responsible for the immunization

of children from 0 to 18 years of age, while GPs are responsible for the population over 19 years of age. Serbia routinely performs obligatory childhood immunizations against tuberculosis, diphtheria, tetanus, pertussis, polio, hepatitis B, measles, mumps, rubella and Haemophilus influenza type b (Official Gazette, 2017b). Since March 2018, obligatory vaccination against pneumococcus was introduced and from 1 April 2019 all children have been vaccinated as part of the routine programme (Official Gazette, 2017b; WHO, 2019a). Also, there is a recommendation for vaccination against human papillomavirus in girls (Nikolic et al., 2015; Stamenkovic et al., 2017). A strategy for targeting measles and rubella elimination and prevention of congenital rubella infection has been formally written and updated, according to the 2012 WHO strategic paper (WHO, 2012), but is still pending adoption. The target date for the elimination of measles has been postponed, but the new target date has not been formally adopted by health authorities at the national level although the defined target is used (93% MCV1, 90% for MCV2 and 93% for RCV1 (WHO, 2019a)). Vaccination coverage level is not available per birth cohort to check for possible immunization gaps because an electronic immunization register is not available. Serbia has an annual immunization report in accordance with the rules for immunization which is published each year on the IPH Batut website (IPH Batut, 2018b). Despite good coverage, the national targets of 95% for some obligatory vaccines (such as MMR vaccine) have still not been reached (Table 5.2). Also, there has been a slight decline in vaccination rates, predominantly influenced by a strong anti-vaccination movement.

TABLE 5.2 Vaccination coverage for selected vaccines, 2007–2016

	COVERAGE (%)									
VACCINATION PERFORMED	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Diphtheria, tetanus, pertussis	98	98	97	97	98	94	97	95	95	94
MMR	96	96	96	96	97	90	93	86	84	81
Hepatitis B in the 1st year	92	94	95	95	96	93	93	94	92	91
Hepatitis B in the 12th year	57	78	62	76	87	83	74	78	73	64

Note: MMR, measles, mumps and rubella vaccine

Source: IPH Batut, 2017c

5.1.6 *Established programmes of health promotion and education*

Programmes of health promotion and education targeting risk behaviour and vulnerable groups have a long tradition in Serbia. Governance of nationwide programmes is the responsibility of the Ministry of Health with financing from the state budget. Several national programmes support health promotion and education within their scope and purpose, such as the 2009 Regulation on the National Programme of Health Care for Women, Children and Adolescents, and the 2009 Regulation on the National Programme of Preventive Dental Care. Currently, a population-based intervention aiming to prevent NCDs and decreasing their burden is in focus (e.g. prevention of tobacco smoking and alcohol abuse, promotion of healthy nutrition and physical activity); however, these programmes are still waiting for a more efficient implementation. During 2017 and beginning of 2018, four new programmes were adopted:

- the National Programme for the Preservation and Improvement of the Health of the Older Population (Official Gazette 8/2017);
- the National Programme for the Prevention of Harmful Alcohol Use and Alcohol-Induced Disorders in Serbia (Official Gazette 115/2017);
- the National Programme for the Protection and Promotion of Sexual and Reproductive Health of the Citizens of Serbia (Official Gazette 120/2017);
- the National Programme for Prevention of Obesity in Children and Adults (Official Gazette RS 9/2018).

IPH Batut has a coordination role for the state programmes at the national level through its Centre for Health Promotion department. This Centre was established by the 2005 Health Care Law following the result of several EU projects aiming to improve health promotion and disease prevention by strengthening capacities of the IPH network.

Also, all 24 regional IPHs have the same structure for the delivery of health promotion and education at regional and municipality level. IPHs cooperate with nongovernmental organizations usually established for prevention of specific diseases and health promotion among specific population groups. Since 2002, the Serbian Public Health Association has also been active in different programmes. During recent years, activities at the local

level are implemented with the significant help of the Standing Conference of Cities and Municipalities (SCTM, 2018), which established a movement for the development and implementation of local public health action plans in all municipalities (Mijatovic et al., 2017).

Nevertheless, many health promotion and education programmes have had decreased visibility and suffered from low attention from health policy. This is due to a lack of support from other sectors outside of the health system, poor recourses and lack of financial resources. For example, the Council for Tobacco Control of Serbia was established in 2006 but ceased to be active after 2011, and the earmarking of revenues from tobacco products was established in 2005 but cancelled in 2012 (0.9% was dedicated to smoking prevention in 2012), because VAT excised on tobacco products was directed to other sectors in need, rather than on health and social care. In fact, actions taken to implement the Tobacco Control policy are fragmented: four different laws are in place to regulate tobacco sales, consumption, as well as taxes and TAPS (tobacco advertising, promotion and sponsorship). The new 2016–2025 Strategy of Tobacco Control has been drafted, and the 2016–2020 Action Plan has been prepared by the National Committee for Tobacco Control of the Ministry of Health, along with the new 2018–2026 Public Health Strategy in Serbia and the corresponding Action Plan.

5.1.7 *National screening programmes*

Serbia started the gradual introduction of organized screening for cervical, colorectal and breast cancer in 2012. However, no data is available to assess how far this screening is organized or opportunistic. According to current cancer incidence data, Serbia is at 12th place in the WHO European Region (age-standardized rate, both sexes in 2018: 307.8) and according to cancer mortality data at 2nd place (age-standardized rate, both sexes in 2018: 150.7) (International Agency for Research on Cancer, 2018). This clearly indicates the need for greater involvement in the prevention, early detection and treatment of cancer. Primary health centres are in charge of conducting screening in their territory (National Cancer Screening Office, 2018). The Cancer Screening Office, established in 2013 within IPH Batut, coordinates, organizes, monitors and evaluates the implementation of screening and provides training and technical assistance to other participants in organized

screening. The data are collected and registered at the time and place they occur, completing the protocol (clinical pathway) for each participant in screening individually. Summary periodic data are forwarded to IPH Batut and the Cancer Screening Office. In Serbia, opportunistic screening programmes are carried out predominantly within the network of 158 primary care centres. However, despite good coverage with preventive services, opportunistic screenings are also below the desired level. There is room to improve coordination among providers at each stage of the screening process. Indicators are collected but monitoring and evaluation is not well developed (Farrington et al., 2018).

BOX 5.1 Are public health interventions making a difference?

The share of women in the first trimester of pregnancy who benefit from modern preventive health services has increased from 54.3% in 2000 to 70.6% in 2010, reaching 93.9% in 2014 (the Millennium Development Goal for Serbia was 85%). However, Multiple Indicator Cluster Surveys (UNICEF, 2007, 2012; SORS & UNICEF, 2014) also reveal that there are significant disparities, not only in the coverage, but also in the content of antenatal and post-neonatal health care available to women from marginalized groups (Janevic et al., 2015; Stojanovski et al., 2017; Popovic et al., 2017). The accessibility of additional counselling services is still not adequate and does not meet the requirements of a child and adolescent friendly system (Cvejić et al., 2010; Bogdanović et al., 2016), but no measures are planned in this regard.

5.2 Patient pathways

For patients with conditions that do not require emergency care, there are two routes to access health care. One is provided by public health care institutions under the NHIF scheme, where patients' entitlements are the same throughout Serbia; the second (for patients who are not insured or want to go to private practice) is to obtain and pay out-of-pocket for treatment in private health care institutions.

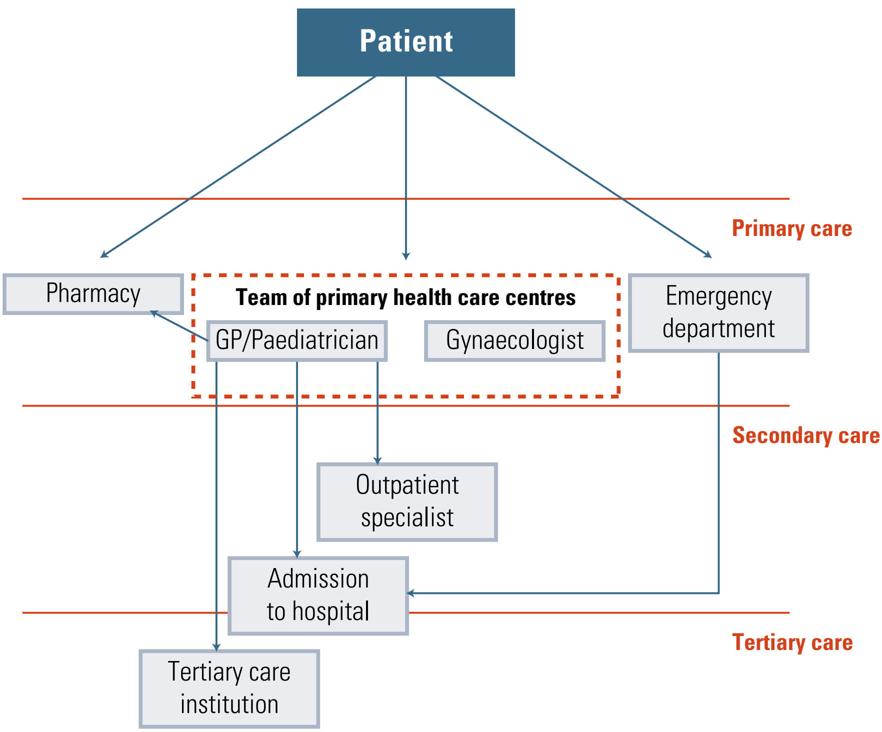
Following the NHIF pathway, primary care physicians (GPs, paediatricians and gynaecologists) are usually the first point of contact for patients within the health system, acting as gatekeepers to more complex medical

care. The recently implemented information system prevents patients circumventing primary care. However, some patients are still using emergency departments to access specialized services directly, although there is no published evidence for this.

In the case of a sudden threat to their health or life, patients can also access medical emergency services, provided in primary care centres or hospital emergency departments.

Patient pathways are the same across the whole country (Fig. 5.2). A typical patient pathway is described in Box 5.2.

FIGURE 5.2 Patient pathway in Serbia



Source: Authors

BOX 5.2 Patient pathway for services covered by the National Health Insurance

A woman in need of a hip replacement due to arthritis would take the following steps:

- After a visit to the GP with whom she is registered, the GP refers her to the orthopaedic department of an outpatient hospital. The co-payment for the visit to the GP is 50 dinars (approximately 0.40 euros), except for patients older than 65, or pertaining to certain vulnerable categories, defined by the regulations of the NHIF, which do not pay.
- The patient has free access to the closest public hospital to where she lives; in case of emergency, she can be referred to any public hospital including a tertiary level hospital; her GP makes an appointment through the e-platform (Integrated Health Information System) (see section 2.6) and the patient obtains the exact date, time and institution for further treatment.
- If she does not want to wait at all, she can choose to go to a private hospital for which she has to pay out-of-pocket as these services, unless in exceptional cases (for some diagnostics procedures where waiting lists are long in public sector), are not covered by the NHIF. Currently, only a handful of patients would choose this option.
- Her GP prescribes any necessary medication; for prescribing certain medicines, the GP needs to obtain a specialist's report.
- After referral, the patient may have to wait for 1 month or more for an outpatient hospital appointment to be examined by a specialist. Depending on the required service, waiting times can vary from 1 day to 3 months.
- After this, she will have to wait for inpatient admission and surgery. Waiting lists are publicly available, and waiting times are up to 2 years. However, if the health condition significantly deteriorates, the operation could be rescheduled for an earlier date. For the hospital stay, she would have to pay a fixed co-payment of 50 dinars per day (approximately 0.40 euros) and a co-insurance of 5% of the cost of the implant (the ceiling for payment is set to 30 000 dinars, approximately 250 euros); if the patient were 65 years or older or belonging to certain defined vulnerable groups, she would not have to pay any co-payment.
- Following surgery and primary rehabilitation at the hospital, the patient goes home, or to a specialist hospital for rehabilitation (or long-term care). Her GP receives her discharge summary from the hospital and is responsible for further follow-up, such as referral to a physiotherapist or for hospital rehabilitation (a co-payment of 50 dinars (0.40 euros) per day will apply for these services under the NHIF scheme).

- If she needs home care after hospital treatment or rehabilitation (such as home nursing) and/or home assistance, it will be prescribed by the hospital (and approved by her GP) and provided.
- A follow-up hospital visit is likely to take place, but it will only be free of charge if she obtains a GP referral.

5.3 Primary care

Health care at the primary level is provided by primary care centres, which cover the territory of one or more municipalities or towns. Primary care centres may be relatively large structures, including several attached health centres, pharmacies and institutes. Ambulatories are staffed according to the size and needs of the population they serve, varying from several full-time teams of doctors and nurses, dentists and pharmacists working in shifts to one or two weekly doctor visits in remote ambulatories. According to official norms (that is, recommendations), citizens should have access to a primary care centre or ambulatory within a 15-minute travel distance.

According to the 2019 Health Care Law, a primary care centre provides minimum preventive health care to all categories of the population, emergency care, general medicine, health care for women and children, a domiciliary care service, as well as laboratory and other diagnostics. Primary care centres also provide prevention and treatment for dental care, health care of employees, occupational medicine and physical medicine, and rehabilitation. This is only the case if a certain health care activity is not organized in another facility in the territory that the primary care centre covers. A primary care centre also provides ambulance transport if that service is not organized in a hospital or in another health care facility; also, primary care centres engage in pharmaceutical health care activities. If a municipality has a primary care centre and a general hospital that are state owned, the laboratory, radiological examinations, and other diagnostics may be organized only within one health care facility.

A primary care centre, depending on the number of citizens in a municipality as well as on their health needs (e.g. distance to the nearest general hospital, and/or existence of other health care facilities in the municipality),

may also engage in some other specialist and consulting activity (internal medicine, ophthalmology, otorhinolaryngology, psychiatry, social medicine with informatics), which is not related to hospital treatment. In some cases, in territories with specific needs where transport and geographical conditions justify it, maternity services and inpatient clinics for diagnostics and treatment may be organized in a primary care centre.

A primary health care centre is based on the selected doctor or "chosen doctor", which requires people to register with a physician of their choice. Patients should first visit their "chosen doctor" before they can see a medical specialist (by referral). The "chosen doctor" can be: a doctor of medicine or a doctor of medicine who is a specialist in general medicine (GP), or a specialist in occupational medicine; a doctor of medicine who is a specialist in paediatrics; a doctor of medicine who is a specialist in gynaecology; or a doctor of dental medicine. The "chosen doctor" practices health care in a team with health care practitioners of adequate medical qualifications. The "chosen doctor" may also be a doctor of medicine of some other specialty, under the conditions specified by the 2019 Health Insurance Law. The "chosen physician" is obliged to: organize and implement measures for the preservation and improvement of the health of individuals and families; work on detection and control of the factors of risk for onset of diseases; administer diagnostics and timely treatment of patients; provide emergency care; refer patients to the relevant health care facility subject to medical indications or to a doctor specialist and shall harmonize the opinions and proposals for the continuation of treatment of the patient; provide home treatment, health care, and palliative care, as well as treatment of patients who do not require hospital treatment; prescribe drugs and medical devices; provide health care in the area of mental health.

Health institutions are obliged to develop annual plans for internal professional monitoring. One third of primary care centres are involved in external monitoring (by expert commissions of the Ministry of Health). The Serbian Medical Society has developed skills testing on an experimental basis, which has also been used to identify the educational needs of physicians in primary care centres. Furthermore, there are regular checks of medical documentation. In case of irregularities or complaints, the Health Inspectorate can apply external control mechanisms.

5.4 Specialized care/inpatient care

5.4.1 *Specialized ambulatory care*

Specialist and consulting activities at the secondary level include more complex measures and procedures of detection of diseases and injuries as well as treatment and rehabilitation of the diseased and injured. Hospital health care activities include placement in hospitals, diagnostics, treatment and rehabilitation, and pharmaceutical provision in the hospital pharmacy.

Health care activities at the tertiary level include provision of the most complex forms of health care: specialist, consulting, and hospital health care as well as scientific, research, and educational activities.

The 2019 Health Care Law regulates all activities within the framework of secondary and tertiary care.

SECONDARY HEALTH CARE SERVICES

Under the Health Care Law, the hospital is engaged in health care activities at the secondary level, as a continuation of diagnostics, treatment and rehabilitation in an outpatient department, that is, when due to the complexity and seriousness of a disease, special conditions are required with respect to staff, equipment, accommodation and drugs.

A secondary hospital also cooperates with the outpatient department of the health centre and provides it with professional assistance. According to the plan of the network of health institutions (Official Gazette, 2006b), the day hospital, as a special organizational unit within the hospital's polyclinic, is organized to perform diagnostic, therapeutic and rehabilitation services for outpatients in the following areas: nephrology (haemodialysis and peritoneal dialysis) and other branches of internal medicine (primarily for the application of parenteral and inhalation therapy); performance of surgical interventions and operations of day surgery; and psychiatry (protection of mental health for the application of combined measures of psychotherapy, sociotherapy, occupational and work therapy and psychosocial support for patients and members of their families).

A hospital has to organize its work in such a way that the majority of patients are tested and treated by the polyclinical service and inpatient treatment is provided only when necessary. A hospital may have, or organize, special organizational units for extended hospital care (geriatrics), palliative

care of people in the terminal stages of disease, as well as for treatment of patients in the framework of the day hospital. A hospital may be a general and/or a specialty hospital.

A general hospital provides health care to persons of all ages suffering from different kinds of diseases. State-owned general hospitals are founded for the territory of one or more municipalities. As a minimum, a general hospital must have organized services for:

- admittance and management of emergency states;
- engaging in the specialist and consulting and inpatient health care activity in internal medicine, paediatrics, gynaecology and obstetrics, and general surgery;
- laboratory, X-ray, and other diagnostics in accordance with its activity;
- anaesthesiology with resuscitation;
- outpatient unit for rehabilitation;
- pharmaceutical health care activity through the hospital pharmacy.

A general hospital also provides either on its own or through another health care facility:

- ambulance transport for patients' referral to the tertiary level;
- supply with blood and products produced from blood;
- service for pathological anatomy.

A general hospital may also be engaged in specialist and consulting activities from other branches of medicine. A general hospital that has been founded for the territory of several municipalities, as well as a hospital at the seat of a county, may also engage in hospital-based health care activities of other branches of medicine.

A specialty hospital provides health care to certain age groups, or to those suffering from certain diseases. A specialty hospital is engaged in specialized, consulting, and inpatient health care in the field for which it has been founded including laboratory and other diagnostics, as well as the pharmaceutical expertise through the hospital pharmacy. A specialty hospital, in accordance with the activity it is engaged in, must also provide ambulance transport for patients' referral to the tertiary level, supply of blood

and products produced from blood and services for pathological anatomy the following services, either on its own or through another health care facility.

TERTIARY HEALTH CARE SERVICE

When the health problem exceeds the technical capacity of the secondary hospital or expert opinion is needed, the patient is referred to the tertiary level of care. Tertiary care is provided at clinics, institutes, clinical hospitals and clinical centres.

A clinic is a health care facility that is engaged in highly specialized, consulting and inpatient care from a certain branch of medicine or dentistry.

An institute provides highly specialized specialist, consulting, and inpatient care, or only highly specialized consulting care in one of several branches of medicine or dentistry.

A clinical hospital is a health care facility that provides highly specialized consulting and inpatient care at the tertiary level in one or several branches of medicine and has to meet the requirements specified in the 2019 Health Care Law.

A clinical centre is a health care facility that unifies the activities of three or several clinics in such a way that it leads a functional unity, organized and capable to successfully administer the affairs and carry out tasks related to: engaging in highly specialized, consulting, and inpatient care; educational and teaching activities; scientific and research activities. A clinical centre provides specialized polyclinic and hospital health care activity in several branches of medicine, and/or areas of health care.

Clinics, institutes, clinical hospitals and clinical centres may be founded only at a university with a medical faculty. State-owned clinics, institutes, clinical hospitals, and clinical centres, in locations where there is no general hospital, are also the activity of a general hospital for the territory for which they have been founded.

5.4.2 *Day care*

Day care is defined as part of the health system that functions within an existing health care institution with specially designed bed places or as an independent institution, with the patient staying for a period of less than

24 hours. The most common areas were day care is provided are internal medicine, psychiatry, surgery, gynaecology, physical medicine, rehabilitation and chemotherapy. The working hours of day care hospitals are usually 5 days a week. Many day care institutions have a problem with inadequate equipment.

According to the available data, the number of patients discharged from day care in 2018 was 197 730, compared with 585 009 discharged hospital patients (IPH Batut, 2018g). However, data about consultations provided in day care and during hospitalizations are not available.

BOX 5.3 What do patients think of the care they receive?

Data from the latest Serbian National Health Survey conducted in 2013 showed that, in total, 53.8% of citizens were satisfied (44.5% satisfied and 9.3% very satisfied) with public health care services, while 64.6% were satisfied (49.8% satisfied and 14.8% very satisfied) with private health care services. Lower educated persons, the poorest ones, as well as the residents of rural settlements were the most satisfied with state health care services, while the most educated, the richest and urban residents were the least satisfied. Regarding the satisfaction with private health care, the most satisfied were residents of Belgrade, the richest and more educated persons (Ministry of Health, 2014).

5.5 Urgent and emergency care

Emergency care is defined in the 2005 Health Insurance Law as direct and prompt medical help provided to avert danger to the life of the insured party, that is, irreversible or serious weakness or damage to health, as well as death. Emergency care is defined as medical care which is rendered within 12 hours of the moment of admission to the health institution. The 2017 Rulebook on the Content and Scope of the Right to Health Care for Compulsory Health Insurance and Co-Payment (Official Gazette, 2017c) further regulates emergency care to be medical care provided at the site of emergency, health care institution or private practice, transport to the nearest health care institution equipped to provide the necessary health care. At the place of injury or illness, health care in emergency medical cases encompasses: first aid, physical examination, medical treatment and drug therapy

as well as transport. In health institutions, health care in emergency medical cases includes: first aid, physical examination, the necessary diagnostic and laboratory examinations, medical treatment and appropriate care, as well as therapy treatment.

The Network Plan for health institutions regulates emergency care, organizing it according to two functionally linked sub-systems: prehospital emergency care and inpatient emergency care.

5.5.1 *Prehospital emergency care*

Prehospital emergency care is the continuous activity of health institutions at the primary care level. It encompasses the provision of medical care at the point of injury/illness and in the health institution, the medical transport of severely ill and injured people to medical institutions and the continuous monitoring of health and the provision of necessary help during transport.

Essentially, it is part of the regular activity of the physician and their associates but at night, on Sundays and during state holidays, prehospital emergency care forms part of the work of the physician on call. In municipalities with over 25 000 inhabitants, primary care centres can establish emergency care units for continuous admissions and emergency care (Official Gazette, 2006b). Prehospital emergency care is also provided through institutes for emergency care in Belgrade, Nis, Kragujevac, and Novi Sad.

5.5.2 *Inpatient emergency care*

Inpatient emergency care is provided by expert teams of the accident and emergency units of general hospitals, clinics, institutes, clinical hospitals and clinical centres in the case of admission for hospital treatment. Emergency care is fully covered by the NHIF for all insured.

Analyses conducted by the IPH Batut showed that in 2015, there were 1 612 013 examinations in emergency care units in primary care centres, out of which 301 272 were at the point of injury or disease, and 356 093 examinations in the institutes for emergency care, out of which 179 558 were performed at the point of injury or disease (IPH Batut, 2015).

In 2013, the Ministry of Health (2013) published national guidelines for prehospital emergency care.

The quality of emergency care is monitored by IPH Batut according to the Rulebook on Health Care Quality Indicators (Official Gazette, 2010d). The analysis showed that in 2015, there were 88 238 calls for life-threatening situations (16.87% of all calls to emergency care). Mean activation time for life-threatening situations (time from call received to notified/activated emergency care team) was 1.11 minutes, reaction time (time from emergency care team notified/activated to arrive at patient) was 8.02 minutes, and prehospital time interval (time interval from arrived at patient to until left scene or patient delivered) was 20.50 minutes. The response time interval (sum of the activation and reaction time) was 9.13 minutes, in line to the EU, where for most countries it is 15 minutes or less (IPH Batut, 2015; Bos et al., 2015). The total number of cardiac arrest cases treated by emergency care teams at the site was 6 281 (5 144 before the emergency care team arrived). The percentage of successful cardiopulmonary resuscitation (CPR) procedures in cardiac arrest occurred before the emergency care team arrived was 18.85%, and 39.29% if cardiac arrest occurred in the presence of the emergency care team (IPH Batut, 2016c). The high percentage of cardiac arrest occurring before the arrival of emergency care teams indicates the need for organized training in CPR for the general population and especially relatives of high-risk patients.

For hospital emergency care, three indicators were analysed: established written protocols for severe multiple trauma care, mean waiting times in emergency care unit of the hospital and percentage of successful CPRs (IPH Batut, 2016c). In 2015, only 27 health care institutions had written protocols for severe multiple trauma, which is not satisfactory, especially as out of all the clinical–hospital centres and clinical centres, only the Clinical Centre of Serbia had established a protocol.

Mean waiting times in emergency care units in hospitals was 11.7 minutes. The percentage of successful CPR was 56.4% in general hospitals, 36% in clinical–hospital centres and 44.1% in clinical centres. It has been noted that the percentage of successful CPRs in secondary and tertiary care institutions is decreasing (IPH Batut, 2016c).

Emergency care is organized in such a way that it is accessible to everyone, including vulnerable groups of the population. There are no official data that some groups of people use services more than others. The problem with overutilization of emergency care units in hospitals was noticed, as a significant percentage of patients accessing emergency units

were not emergency cases. Current problems are lack of resources: human resources, adequate and modern equipment, and financial resources. In 2017, a new triage system of emergency cases was initiated in the Clinical Centre of Serbia but it is still not fully implemented.

5.6 Pharmaceutical care

The key players in the implementation of pharmaceutical policy are the Ministry of Health, the National Health Insurance Fund and the Medicines and Medical Devices Agency of Serbia (ALIMS).

In the domestic pharmaceutical sector, four leading manufacturers combined (Hemofarm, Pharma Swiss, Galenika and Actavis) cover 70% of the domestic production of medicines. In 2016, domestic manufacturers held 38% of the market share by financial value and 61% by volume (Chamber of Commerce and Industry of Serbia, 2017b). Pharmaceutical prices are under state control and are regulated by by-law (the 2015 Decree on the Criteria for the Formation of Prices for Drugs for Use in Human Medicine, which Are Under a Prescription Regimen) (Official Gazette RS 86/2015).

Pharmaceuticals can be distributed to patients through pharmacies as well as hospital pharmacies which operate within hospitals at secondary and tertiary level of care. According to the Decree on the Plan of the Health Institutions' Network (Official Gazette, 2006b), public pharmacies are established to cover at least 40 000 population, and pharmacy branches (public institutions, separate facilities but pertaining to a pharmacy) cover at least 10 000 population. Along with public pharmacies, there are a significant number of private pharmacies with their branches, but their total number is not available. Pharmaceuticals covered by the NHIF are distributed by both public and private pharmacies. The NHIF has contracts with over 2 400 private pharmacies (this number comprises pharmacies and their branches). While the network of pharmacies in the country is sufficient, there is a question of whether they are well distributed across the territory, as private pharmacies tend to be more concentrated in more affluent urban areas. According to the Chamber of Commerce and Industry of Serbia, the market share of private pharmacies increased from 41% in 2012 to 68% in 2016 (Chamber of Commerce and Industry of Serbia, 2016).

The NHIF covers pharmaceuticals which are on the Drug List (with a co-payment of approximately 0.40 euros for pharmaceuticals on the Positive

List and 10–90% for other). The Drug List is set by the NHIF with an agreement from the government. Certain defined categories of the population are exempted from co-payment (children and students up to the age of 26; women during pregnancy, labour and 12 months after delivery; war invalids; and blind and permanently disabled persons).

The NHIF covers only pharmaceuticals prescribed by physicians working in the public health system; however, they can be obtained in public and private pharmacies which are contracted by the NHIF.

Physicians can prescribe medicines in private practices, which are to be paid fully by the patient. For acute diseases, medical doctors can prescribe medicines up to 30 days. Exceptionally, for chronic conditions, under the condition that treatment has not changed for 1 year at least, medicines can be prescribed for up to 60 days.

The Medicines and Medical Devices Agency of Serbia is in charge of overseeing and monitoring the consumption of medicines and the promotion of their rational use. In order to control health care costs, new payment mechanisms for physicians in primary care were introduced in 2013. Physicians obtain a basic salary and incentives based on performance. The cost of prescribed medicines is part of the performance criteria. However, the incentive is low, and the total incentive cannot exceed 8.08% of the salary (NHIF, 2013) (see section 3.7).

Consumption of medicines has increased from 2010 and, in 2015, reached 1 609 DDD per 1 000 population per day (ALIMS, 2018). In 2015, medicines used for cardiovascular diseases (ATC group C) had the highest share in medicinal consumption (701.41 DDD/1 000 population per day or 43.59% of total consumption). This is followed by medicines used for blood and blood forming organs (ATC group B) with 18.07% share in total consumption (290 DDD/1 000 population per day). Out of total consumption, medicines used for the nervous system (ATC group N) had a share of 11.52% (185.36 DDD/1 000 population per day) and medicines used for the alimentary tract and metabolism (ATC group A) had 10.58% share (170.22 DDD/1 000 population/day). All other groups had a significantly lower share in medicinal consumption (ALIMS, 2016).

NHIF expenditures for medicines are approximately 30 euros per insured person. According to available data, the share of costs for prescribed medicines covered by the NHIF decreased from 89.15% in 2010 to 81.5% in 2014 (NHIF, 2018b).

5.7 Rehabilitation/intermediate care

Rehabilitation is organized at primary, secondary and tertiary care level. At primary care level, primary care centres provide services in physical medicine and rehabilitation unless those services are provided by another specialized institution such as a hospital in the territory covered by the primary health care centre.

Hospitals provide early rehabilitation during hospital treatment, as well as rehabilitation in day care and outpatient departments. At the secondary level, each general hospital has an outpatient department for rehabilitation. Prolonged rehabilitation as continuation of treatment and rehabilitation is delivered in hospitals specialized for rehabilitation of certain diseases/injuries in patients when functional limitations cannot be effectively treated in outpatient care or within hospital treatment of the disease. Prolonged rehabilitation is provided exclusively after completion of early acute rehabilitation treatment in hospitals for acute care.

State-owned hospitals specialized for rehabilitation have been established with a total of 3 800 beds, or 0.5 beds per 1 000 population in 20 specialized hospitals and two institutes (Decree on the Plan of the Health Institutions' Network) (Official Gazette, 2006b).

In addition to the above-mentioned specialized hospitals, specialized rehabilitation is delivered in tertiary health care institutions: clinical centres, clinical–hospital centres, and institutes. An institute for psychophysiological disorders and speech pathology has been established for detection, treatment and rehabilitation of patients with developmental disorders, hearing impairments in children and youth, as well as speech pathology of patients in all ages, and vision impairment of preschool children.

The NHIF covers costs for medical rehabilitation in the case of disease or injury in order to improve or restore function lost or impaired as an outcome of acute disease or injury, aggravation of chronic disease, medical intervention, congenital anomaly or developmental disorder. Medical rehabilitation comprises kinesiotherapy and all types of physical therapy, occupational therapy and speech and hearing therapy as well as certain types of aids including training for implementation of the aid.

5.8 Long-term care

Long-term care for older people, people with physical disabilities, people with chronic diseases and people with learning disabilities is provided through the health system and the social care system.

The health system provides home care as well as inpatient care within health care institutions for older persons, the chronically ill, and people with disabilities.

Home visit services of primary care centres should provide at least one home visit per year. However, a study from the Institute of Public Health showed that in 2015, there were 0.22 visits per person aged 65 and above. However, the number of home visits per older person varies significantly and in some primary health centres is only 0.01 per older person. This small number of visits may be due to the lack of personnel in patronage services of some primary care centres but could also be attributed to the poor organization and lack of clear procedures and practice guidelines (IPH Batut, 2016c).

Regarding home visits to chronically ill people, only 8% were covered by home visits in 2015. Coverage of disabled persons with home visits could not be calculated, as precise data on the number of persons with disabilities are not available (IPH Batut, 2016c).

5.8.1 *Long-term inpatient care*

Prolonged hospital stays due to type of disease and level of disability of hospitalized patients up to 30 days is defined as prolonged hospital care, and hospital care longer than 30 days is defined as long-term care. For prolonged and long-term care of patients with tuberculosis, nonspecific pulmonary diseases and other chronic conditions (excluding mental illness described in section 5.11), there are 912 hospital beds in Serbia, or 0.12 per 1 000 population (Decree on the Plan of the Health Institutions' Network) (Official Gazette, 2006b).

5.8.2 *Social care*

Within the social care system, services are provided for persons with disabilities, children and youth with disabilities, and for older people. Long-term care services provided by the state-owned network of social care institutions include: help at home, day care and care within institutions (residential care).

There are several institutions providing day care for children and youth with disabilities and behavioural problems. According to the 2011 Social Care Law, day care should be organized by local communities. Therefore, community-owned day care institutions depend largely on the ability and interest of local communities to provide them. On the other hand, several day care institutions for children and youth with disabilities have been established by private individuals or national and international NGOs. Residential care is provided for children and youth with developmental disabilities in 18 institutions. Out of these, two provide care for adults with communication problems as well, and in three institutions, along with children with developmental disabilities, care is provided for adults with intellectual and mental disabilities (in two facilities, children and adults are separated) (Ministry of Labour, Employment, Veteran and Social Affairs, 2017).

There are 16 publicly owned institutions for adult persons with disabilities, out of which 13 are for adults with intellectual and mental disabilities, two for adults with physical disabilities and one for persons with sensory disabilities.

5.8.3 *Care for older people*

There is a network of 43 publicly owned institutions providing care for older people in nursing homes. Some of them provide day care as well as home care for older people. They are subsidized and OOP payments for clients depend on their financial status. Some local communities organize help at home for older people in their local communities. Trained providers support older people (sometimes also persons with disabilities) in daily activities (e.g. procurement and preparation of food, maintaining personal hygiene, help with house work, heating and other services) for 2–3 hours per day 3 to 5 times per week.

Nursing homes also provide residential care for older people with different levels of disabilities. Even though services in publicly owned

gerontology centres are subsidized, fees are relatively high, and exceed the average pension. There is also an increasing number of privately owned nursing homes.

In publicly owned social care institutions, health care is provided if needed and is regulated according to the 2019 Health Care Law and the 2019 Health Insurance Law.

The Minister of Labour, Employment, Veteran and Social Affairs introduced licensing for social care providers in 2014, with the aim to improve and standardize the quality of social care. Licences are obligatory for publicly and privately owned institutions.

5.9 Services for informal carers

Informal care is widespread in Serbia. The biggest share of home care is provided by informal carers, although no official data is available on the exact percentage. Similar to most other countries, informal caregivers are usually family members, friends, or relatives of the care recipient. Within informal care, mothers are usually seen as the "natural" primary caregivers for children. Others, such as grandparents, fathers, and siblings, can also be informal caregivers. Informal care of older people is often undertaken by adult children, their spouse, and/or household members. Informal caregivers usually help in carrying out everyday activities, as well as other forms of care within their capabilities.

The provision of special support to the family carers of older people and dependent members has been defined as one of the challenges ahead in Serbia, as it is expected that the role of informal caregivers could become increasingly important in line with the demographic trends that include an increase in the number of older people. It is also planned to promote systems of support from relatives, friends or neighbours, as well as coordination and more intensive cooperation among different parts of the care system and family carers.

5.10 Palliative care

In the last decade, palliative care has been further developed through the project Development of Palliative Care in Serbia (March 2011–April 2014),

financed by the EU. The aim of this project was to support the Ministry of Health in the implementation of a comprehensive and modern system for palliative care, with technical support for implementation of a Strategy for Palliative Care and an Action Plan which followed the strategy, both adopted in 2009 (Downing et al., 2012). According to the National Strategy, in Serbia, the establishment of services for specific palliative care was foreseen at three levels of health care:

- **Primary care:** all primary health care centres which cover a population of over 25 000 residents (in total 88 out of 157 primary health care centres in Serbia), should establish teams for palliative care, as a part of home treatment and care services;
  - The Establishment of a Centre for Coordination of home treatment and care services in the Institute for Gerontology, Home Treatment and Care, Belgrade.
- **Secondary level:** the establishment of 30 specialized units for palliative care, in the territory of Serbia, as a part of departments for prolonged treatment and care.
- **Tertiary care:** establishment of consultative teams for palliative care.

A team for palliative care at the primary level should consist of a medical doctor, a specialist in general medicine, a nurse, a patronage nurse, a physiotherapist, a social worker, and a wider team of a psychologist/psychiatrist, a priest and a volunteer should also be available; on the secondary and tertiary care, the team should consist of a medical doctor – internal medicine or other specialist – and nurses.

Education and training of health professionals needed for palliative care development were held through the 2017 project Palliative Care in Serbia, financed by the Ministry of Health in collaboration with the IPH Batut. IPH Batut conducted 25 courses of continuous medical education between July and December 2015 and educated 643 health workers and health associates (119 medical doctors, 520 nurses and technicians and four health associates) (IPH Belgrade, 2017).

The new 2019 Health Care Law includes a modification with respect to the 2005 one, which enables the establishment of new types of health care facilities – institutes for palliative care (Official Gazette, 2019a). Further improvement of implementation of palliative care into regular health care

services, further education for practising health care professionals on the principles of palliative care and monitoring of provided services remain as challenges.

5.11 Mental health care

There are five special psychiatric hospitals in Serbia (of asylum type) in Novi Knezevac, Vrsac, Kovin, Gornja Toponica and Psychiatric Clinic "Dr Laza Lazarevic" in Belgrade, which have 3 250 beds all together (Official Gazette, 2013b). Out of this total, 1 500 beds are intended for treatment of patients with acute psychotic disorders, addictions, forensic psychiatry, psychogeriatric, and psychosocial rehabilitation, while the remaining 1 750 beds are intended for hospitalization of chronic psychiatric patients.

Psychiatric care is organized in general hospitals, where there are psychiatric wards, specialized consultative care, dispensaries, and day hospitals, and in clinics and the Institute for Psychiatry (see section 5.4). There are some psychiatric offices in primary care centres which are not yet completely abolished.

In 2015 there were 5 300 hospital beds for psychiatric patients in Serbia (IPH Batut, 2016a). In 29 general hospitals (out of 40), there were 1 126 hospital beds. The length of stay for psychiatric patients in general hospitals varied between 10.2 days and 37.1 days. There are 6.41 psychiatrists in Serbia per 100 000 residents along with 4.32 neuro-psychiatrists per 100 000 (IPH Batut, 2016e). Neuropsychiatrists deal with both psychiatric and neurological patients, especially in some parts of the country.

In 2007, the Serbian Government adopted the Strategy for Mental Health (Official Gazette, 2005c) and the National Committee for Mental Health submitted the draft for the Law on Protection of Persons with Mental Disabilities, which was passed in 2013 (Official Gazette, 2013a). The Strategy was the first to define the vision, values and principles of reforms in the area of mental health, and one of the main principles was that: "mental health care services should provide modern, comprehensive treatment which includes a bio-psycho-social approach and which should be done in the community, as close to the family of the patients as possible" (Official Gazette, 2005c). As a result, the first pilot centre for mental health in the community, under the special hospital for psychiatric disorders Gornja

Toponica, was established in the municipality of Mediana in Nis (Helsinki Committee for Human Rights in Serbia, 2014).

Based on the Law on the Protection of Persons with Mental Disabilities that was passed in 2013, the Ministry of Health of Serbia adopted two laws to regulate the basic principles, organization and provision of mental health services, the modes and acts, organization and conditions of treatment and hospitalization of persons with mental disorders in health care institutions (Official Gazette, 2013b, 2013c).

5.12 Dental care

Dental care is organized and provided through both the public and private sector. Dental services are provided at the primary care level (in primary care centres, institutes of occupation medicine, the Institute for Students' Health care, and the Institute for Gerontology and Palliative Care of Belgrade) and other institutions at secondary and tertiary care (e.g. Faculty of Dentistry in Belgrade and dental clinics in Novi Sad, Nis and Kosovska Mitrovica) (Official Gazette, 2012b).

Dental services at all levels of the health system are available for certain population categories (Official Gazette, 2019b): children before the age of 18, pregnant women and women 12 months postpartum, and disabled individuals. Some other categories are also included: students until the age of 26, and socially excluded individuals and some other categories (older people, individuals with severe mental or physical disability, individuals with severe congenital or acquired facial of jaw deformities, etc.) (the list of categories of the population who have dental services available at all levels was expanded in 2014). Changes in human resources included the transition of experienced doctors of dentistry from primary care into early retirement or the private sector (Markovic et al., 2014).

In 2015 more than half of the population aged over 15 (54.2%) had a "chosen dentist", 26.9% of the population in the public sector and 31% in the private sector. The highest percentage of population with a "chosen dentist" is found in Belgrade (72.3%), in urban settings (61.9%), in population groups with college and faculty education (76.4%), and in the richest quintile (77.6%). Since 2012, there has been a reduction in total numbers of fillings per visit, and an increase in the number of treated teeth, indicating that patients do not visit a dentist in a timely manner (IPH Batut, 2016a).

5.13 Health care for specific populations

Under the 2019 Health Care Law, social care and health care are defined to provide health care to those groups of the population who are exposed to increased risks of contracting diseases, health care of persons related to prevention, control, early detection, and treatment of diseases of major social and medical importance, as well as the health care of the socially vulnerable population.

5.13.1 *Health care for the Roma population*

According to the 2011 census, there are 147 604 Roma in Serbia, amounting to 2.05% of the population, although it is worth noting that Roma tend to be undercounted in censuses. Poverty, poor housing conditions, lack of education, prejudice and discrimination negatively affect Roma access to health care. Administrative obstacles make it difficult for Roma without personal documents to obtain health care, even though they are in the most vulnerable category. Many Roma settlements are located on the periphery, so they are far from health institutions, meaning that residents are often forced to pay public transport costs. Limited knowledge of the Serbian language may be an obstacle in accessing important information concerning health care. All these obstacles point to the necessity of adopting special measures to improve the accessibility of health care to the Roma population. The Ministry of Health launched the Health Mediators Project in 2008, seeking to improve the health and quality of life of Roma in Serbia (see section 5.1).

6

Principle health reforms

Summary

- Democratic changes in 2000 and the adoption of the policy document Health Policy of Serbia in 2002 initiated significant progress in health policy in Serbia. The aim of an ambitious reform programme, undertaken from 2004 to 2010, was to strengthen preventive health care services with the view to decrease rates of preventable diseases and total health care costs.

- After 2012, reforms focused on improving infrastructure, technology and implementing an integrated health information system. The reforms also included the restructuring of hospitals to respond more effectively to patient needs and the development of a new basic package of health care services aligned with existing resources.

- A reform of the payment system for primary care has started to introduce capitation, while a model of diagnosis-related groups (DRGs) is being introduced for payments for secondary health care.

- However, implementation of some reforms is still pending, such as the establishment of municipal health councils as multidisciplinary bodies to support health, or the establishment of a realistic plan for human resources.

6.1 Analysis of recent reforms

After democratic changes in 2000 and the adoption of the policy document Health Policy of Serbia in 2002 (Ministry of Health, 2003), new legislation set the main directions of health reforms through the 2005 Health Care Law, the 2005 Health Insurance Law and the 2005 Law on Chambers of Health Workers. These laws, enforced in 2005, identified the reform of the health sector as one of the national priorities, and brought several significant changes to governance, service delivery, the health workforce, the health information system, medical products, vaccines and technologies, and health financing (WHO, 2010b).

The government committed itself to carrying out health reforms within the wider context of EU integration and public sector reforms (Ministry of Health, 2003). The majority of the required strategic documents has been drawn up, but their implementation has been delayed, as they depend on financial support from international agencies and donors (CEVES, 2017). Major reforms and policy initiatives since 2000 are presented in chronological order in Table 6.1.

TABLE 6.1 Major health reforms in Serbia, 2000–2019

YEAR	MAIN DOCUMENTS AND THEIR IMPLICATIONS
2000	Health Policy of Serbia
2002	Law on Local Self-government
2005	Health Care Law, Health Insurance Law and Law on Chambers of Health Workers
2005	Law on Safety and Health at Work
2006	Strategy for Youth Development and Health
2006	Constitution of Serbia
2006	Decree on the Plan of Health Institutions Network
2006	Law on Financing of Local Self-governments
2007	Law on Local Self-government
2007	Tobacco Control Strategy of Serbia

2007	Strategy on the Development of Mental Health Protection
2008	Decree on Voluntary Health Insurance
2008	National Strategy on the Protection of Children Against Violence
2008	Strategy for the Promotion of Childbirth
2009	Special Protocol of the Health System To Deal Efficiently with the Cases of Violence, Abuse and Neglect of Children
2009	Strategy on the Development of e-Government in Serbia for the Period 2009–2013
2009	Law on the Budget System
2009	National Sustainable Development Strategy
2009	Law on Emergency Situation
2009	Public Health Law and Public Health Strategy
2009	Strategy for Continuous Improvement of Health Care Quality and Patient Safety
2009	Strategy for Fight Against Drugs in the Serbia
2009	Strategy for Prevention and Control of Chronic Noncommunicable Diseases (NCDs)
2009	National Strategy for Improving the Position of Women and Promoting Gender Equality
2009	Strategy for Improving the Status of Roma
2009	National Programme of Health Care of Women, Children and Adolescents
2009	National Programme of Preventive Dental Care
2009	Strategy for Palliative Care
2012	Law on Public Procurement
2013	Strategy for Safety and Health at Work
2013	Law on Patient Rights
2013	Decree of Rules on the Corrective Coefficient, the Highest Percentage of Increase in Basic Salaries, Criteria and Norms for the Part of the Salary that is Realized on the Basis of Work Performance as well as the Method of Calculation of Salaries of Employees in Health Institutions
2014	Law on Health Records and Reporting in the Field of Health
2016	New Public Health Law

2018	Law on the Transplantation of Human Organs and Law on Human Cells and Tissues
2018	Public Health Strategy
2019	The New Health Care Law and Health Insurance Law

6.1.1 *Leadership and governance*

The first step to modernize the Serbian health system was to introduce the document Health Policy of Serbia in 2000 (Ministry of Health, 2003) (see sections 2.1 and 2.5) which created the conditions to reform the health system. After then, it took 3 years for the parliament to endorse new laws (that is, Health Care Law, Health Insurance Law and Law on Chambers of Health Workers), recognizing the importance of decentralization in the decision-making process. The role of local governments was also strengthened through the adoption of the 2006 Constitution and a series of other laws including on territorial organization and local elections (Official Gazette, 2007a). Primary care centres (*Dom zdravlja-s*) were decentralized to local governments, and as such, today local governments are still responsible for appointing directors and have formal responsibility for performance of primary care centres. Despite decentralization happening a decade ago, local governments have been slow to take financial and oversight responsibility for primary health care services. There is a broad consensus that this decentralization was undertaken without adequate preparation of local governments (see section 2.4) (EY, 2016). Therefore, the new 2019 Health Care Law is moving again towards centralization (see section 2.3).

While the national regulation recognized the role of the public and private sectors, in practice these are managed as parallel systems. However, the private sector is not strategically coordinated with decisions in the public sector, and referrals made by private doctors are not recognized in the public system (CEVES, 2017). Several bodies were established to play stewardship roles, such as the Serbian Health Council, the Medicines and Medical Devices Agency and the Agency for Accreditation of Health Care Institutions of Serbia (see section 2.4). At the local level, decentralization was supported by the establishment of the Health Council as a multidisciplinary and intersectoral advisory body responsible for public health action at the local level in each municipality. At the same time, changes on regulation

in other sectors also supported changes in stewardship; for example, in the educational sector, new bodies were established such as the National Council for Higher Education and its Commission for Accreditation and Quality Assurance. This change had a major impact on the health workforce.

So far, there has not been a formal evaluation of the implementation of the Health Policy of Serbia. However, it is possible to assess its impact through evidence from the National Health Survey and health service assessment, particularly an assessment of quality of care (carried out each year). Since the adoption of the Health Policy of Serbia, international participation supported its implementation through several projects (both by the European Union and the World Bank) (European Commission, 2018; World Bank, 2018a).

6.1.2 *Service delivery*

Recent reforms called for the optimization of the network of health care institutions in Serbia in order to address regional inequalities and disparities in the accessibility of health care services (Jankovic, Janevic & von dem Knesebeck, 2012).

The most prominent reform in service delivery introduced the concept of "chosen doctor" in primary care in 2005 with the Health Care Law, and also supported by the 2019 Health Care Law. The "chosen doctors" are general practitioners (GPs) or specialists in general medicine, specialist paediatricians, specialist gynaecologists and dentists (Official Gazette, 2019a, 2019b).

The reform process also made it possible to set up counselling services either for vulnerable groups of the population or for people with specific diseases such as diabetes. Counselling services addressed a range of health risks and behaviours (e.g. nutrition, physical activity, substance use, prevention, mental health, etc.).

The reform process has further acknowledged the visiting nurses' network in Serbia, which is recognized as one of the best in the region and often promoted as good practice. For example, their contribution to the care of pregnant women and neonates is very well recognized, reconfirmed by continuation during the reform process (WHO, 2010a). The reform established an important role for the visiting nurses' network in identifying health and psychosocial risks and referring families at risk to needed services. In

order to support prevention in the health system, the Ministry of Health established preventive centres placed in primary care (see section 5.1.5).

The Ministry of Health has made considerable progress in adopting legislation and interventions that recognize the vulnerability of the Roma population (Official Gazette, 2009j). A particularly successful initiative has involved hiring Roma health mediators to be assigned to multidisciplinary teams in primary care centres which conduct home visits (see section 5.1).

To support better management of specific diseases, the Commission for Clinical Guidelines and Good Practices undertook necessary steps for the introduction, not only of guidelines, but also of clinical pathways for the major health conditions contributing to the burden of disease, starting since 2010 and currently ongoing (AZUS, 2018) (see section 2.2.2).

Significant efforts were seen in the introduction of the 2019 Health Care Law of Waiting Lists for specific medical procedures and expensive interventions in order to provide equal distribution of health care delivery, and to provide a rational use of valuable resources for all citizens on equal terms. This measure has not been assessed yet. Patients placed on the list can be seen in a health institution where a health service has to be provided. Waiting lists are publicly available on the NHIF website (2018).

6.1.3 *Health workforce*

The biggest reform step in the human resource field was the introduction of relevant chambers for five regulated professions (physicians, nurses, dentists, pharmacists and biochemists) and licensing procedures in 2005 (Official Gazette, 2005c). Capacity-building programmes were initiated for health workers aligned with newly established national guidelines, to provide the continuing professional development necessary for the renewal of licences implemented throughout Serbia (Šantrić-Milicevic et al., 2015a). Embracing the Bologna Process, Serbian universities introduced new programmes such as Master's in Public Health, Master's in Health Management and academic programmes for nursing on all three levels of Bologna degrees.

6.1.4 *Health information system*

Since 2000, the Ministry of Health has invested efforts to develop health information systems (HISs) supported by international agencies (EU and the World Bank). However, essential reforming steps came into force only with the 2014 Law on Health Records and Reporting in the Field of Health (Official Gazette, 2014b), which introduced conditions for the electronic health record (EHR). In 2015 the Ministry of Health introduced a unit responsible for policy oversight of health information, aimed to guide the overall development and assure consistent data and nomenclature standards and inter-operability of systems (EU-IHIS, 2015) (see section 2.6).

After the adoption in 2009 of the Programme of Work, Development and Organization of the Integrated Information System – "E-Health" (Official Gazette, 2009f), an e-health unit was established in the Ministry of Health in June 2014 to deal with information technology development and regulation in the sector. Over the years, significant financial assistance has been provided in Serbia for the development of e-health. The creation of a fully integrated health information system is the final goal. A committee was established in September 2014 to support the process; in addition, a working group for developing an e-health National Plan was established in December 2014 and funding has been recently secured to this effect, but the Plan has not yet been developed. Collection and analysis of information has remained fragmented and the available information is not currently used to strategically steer the health system. The national and regional IPHs have primary responsibility for collecting and analysing health system data, but these reports typically are completed a year later. Facility managers send data to their regional IPHs but receive limited or no feedback or analysis. The NHIF has enormous data on service costs and provision and has started collecting performance-based information, DRGs and other costs information, but these data are not being used to analyse the efficiency of facilities.

6.1.5 *Medical products, vaccines and technologies*

Despite being one of the largest in the south-eastern European Region, evidence shows that the Serbian pharmaceutical market still needs development, particularly in the supply of regular medicines and long waiting times for procedures, as there is a lack of sophisticated equipment (EY, 2016).

Since 2012, the process of public procurement of medicines and medical devices has been strictly regulated, resulting in significant savings in the NHIF budget. However, these saving were not diverted into expansion of innovative medicines and therapies (compared with similar countries, Serbia still has limited numbers of innovative medicines covered by the NHIF) (Lončar, 2016). Also, individual institutional plans are not based on real needs for medicines and medical supplies but on the historical planning rules, as regulated by the 2019 Health Care Law and the 2019 Health Insurance Law.

6.1.6 *Health system financing*

The performance of Serbia's public financial management system has improved in recent years with the adoption of new regulations and the establishment of a stronger institutional framework, including the Fiscal Council and the State Audit Institution.

Long awaited changes in the remuneration system for primary care professionals have been introduced, with the assistance of international organizations. Under the new system, enforced from 2013, "chosen doctors" are paid based on their performance, instead of fixed salaries, as the payment system gradually transitions towards capitation. Payment of services provided for hospital care is also now being made based on DRGs, in combination with fee-for-service. The new system of payment for hospitals has begun to be implemented in 2019, although it still covers only a small share of hospital procedures.

6.2 **Future developments**

6.2.1 *Leadership and governance*

The leadership and governance of the health system is focused towards improving health and reducing the health inequalities of the Serbian population (CEVES, 2017). For that purpose, all self-government authorities in Serbia (in total 158) are expected to establish municipality health councils

as multidisciplinary bodies to support health (Official Gazette, 2018a). This policy has been recently adopted (2018) and its implementation is pending. Also, all self-government authorities are committed to produce and publish an annual analysis of health status on the basis of health indicators, living and working environment indicators, demographic and social determinants of health. Further to the establishment of the National Public Health Council, a mechanism of integrated management for implementing Health in All Policies is expected to be developed. However, the establishment of strong partnerships between decision-makers, research, academic and public health institutions will be the main challenge.

The direction for the future development of the health system in the sense of either centralization or decentralization is to be determined (EY, 2016). Centralization of the state ownership of primary care institutions (except pharmacies) has been regulated in the 2019 Health Care Law (Official Gazette, 2019a) (see section 2.3).

The Ministry of Health also aims to involve patients' organizations and other NGOs in decision-making regarding the development of the health system (NHIF, 2018a; Ministry of Health, 2018).

6.2.2 *Service delivery*

The Ministry of Health and the current government aim to develop good quality and efficient health care, including through international support (World Bank project, Second Serbia Health Project) (World Bank, 2018a). The intention is to perform the accreditation of health care institutions at all levels by 2026. In addition, the Ministry of Health is planning to develop on average three new clinical guidelines per year, with parallel revision of two existing clinical guidelines per year (Official Gazette, 2018c). To improve the procedures assuring compliance with patients' rights, public health services will have a significant role in supporting the improvement process (monitoring and reporting), as stated in the recently adopted 2018 Public Health Strategy.

6.2.3 *Resources for health*

At present, Serbia has a strong focus towards the development of infrastructure and medical technologies, as seen in the governmental plans for reconstruction of health care facilities. This development could be seen in efforts invested to further improve the integrated health information system and to build and equip tertiary health care institutions. An example is the construction of the University Clinical Centre in Nis, and similar actions are foreseen in Belgrade, Novi Sad and Kragujevac (Ministry of Health, 2018).

An important challenge is the mismatch between the production and the employment capacities for physicians and nurses, contributing to high unemployment and migration (Šantrić-Milicevic et al., 2015b). Serbia so far has relied entirely on centralized staff planning; however, a strategic human resources plan for population health improvement does not exist. Producing a realistic plan for human resources for health care will be essential, as currently, many Serbian health care professionals work in EU countries and Serbia might face even bigger outmigration in the future (Šantrić-Milicevic et al., 2014; Gacevic et al., 2018) (see section 4.2).

6.2.4 *Health system financing*

Currently, the health system in Serbia is not financially sustainable in the long run, as spending related to the delivery of health care services is constantly increasing, as are out-of-pocket (OOP) payments (Lončar, 2016) (see section 3.4.1). It is hoped that a better inclusion of the private sector, both by more efficient contracting with health care providers and by enabling citizens to opt for different VHI schemes (both private and public in the NHIF), will allow a better alignment to the actual needs of the insured and reduce OOP payments. With regard to the improvement of payment mechanisms, the World Bank Serbia Second Health Project is piloting DRGs for hospital care, while the NHIF is developing a performance-based payment system in primary care (World Bank, 2018a; NHIF, 2018a).

7

Assessment of the health system

Summary

- Serbia has a comprehensive universal health system with free access to health care services at the primary level, but there are inequalities in the utilization of health services.

- Patients' rights are protected by a range of regulations and monitored by the local health councils. However, there is no full participation of the population in decision-making in the health system, and complaints usually focus on the conduct of health workers and the organization of the health system.

- Financial constraints are the main reason for unmet needs for medical care, which are more frequent among lower educated people and the poorest people.

- Serbia spends 8.8% of its GDP on health, which is one of the highest percentages in the Balkan region. However, the coverage of the target population by screening at national level is still very low and tobacco and alcohol consumption rates have been increasing. There is a need to invest in prevention.

- Catastrophic OOP patient payments are reported from 2.3% of respondents, with higher prevalence rates in rural areas, larger

households, among the poorest people and chronically sick household members.

- The present system of financing encourages inefficiency in the use of resources and provides few incentives for improved service volume and quality. The provider payment system for both primary and hospital care remains input-based, although it is being slowly changed to a capitation system in primary care and diagnosis-related groups (DRGs) for hospital care.

7.1 Health system governance

Serbia lacks a transparent and comprehensive system of assessing the value of health care investments and determining how to pay for them. Contributions of compulsory health insurance of employed citizens are not enough to cover operational expenditures of the health sector and, hence, health care is also financed from the state budget. Low income from insurance payments and insufficient funds from the state budget have created a cycle of debt in which the NHIF does not refund money to hospitals and other providers, who in turn delay payment to suppliers such as drugs and utilities companies. Contribution evasion (avoidance of health insurance payments) accounts for almost half of the NHIF funds collected on an annual basis. One third of these funds are unprofitable (not yielding financial gain) because the companies are placed into liquidation, companies which are in restructuring owe half the debt, while public enterprises owe a portion of the debt.

The population does not fully participate in decision-making processes in the health sector. Cooperation with civil society organizations is mainly ad hoc in the domains of defining health policy, programme implementation, monitoring and evaluation through consultations, meetings, conferences, round table and public discussions. It seems to be difficult to establish cooperation between representatives of the state and civil society organizations, especially in the process of monitoring and evaluating health policies (Belgrade Centre for Security Policy, 2013).

Patients' rights protection is supported by the 2013 Law on Patients' Rights (Official Gazette, 2013a), which promulgates 19 general patients' rights (see section 2.8). Following this legislation, two new institutions were

established in each municipality: an adviser for the protection of patients' rights, who is responsible for all citizens (insured and uninsured), and a Health Council. The main role of the Health Council is to monitor and report on the protection of patients' rights to the Ministry of Health and the Ombudsman. In parallel, the NHIF funds a Protector of the Rights of Insured Persons, who is employed in each health institution and helps insured people in exercising their rights. The number of complaints filed by patients in state health institutions in 2016 are presented in Table 7.1. The most frequent complaints referred to the conduct of health workers and health care associates, followed by the organization of health services and patients' rights. Evidence suggests that further work in raising awareness and empowerment of patients is needed.

TABLE 7.1 Number of complaints filed in state health institutions in Serbia, 2016

TYPE OF COMPLAINT	NUMBER OF COMPLAINTS FILED	SHARE (%)
Quality of health services	172	11.6
Conduct of health workers and health care associates	363	24.5
Method of charging health services	15	1.0
Organization of health services	332	22.4
Waiting time for health services	205	13.8
Refund of funds	48	3.2
Patients' rights	295	19.9
Other	51	3.4
Total	**1 481**	**100**

Source: IPH Batut, 2017i

Nearly three quarters of respondents to a 2013 survey considered the health system the most corrupt part of society, after the country's political parties (The Economist Intelligence Unit, 2016). There are informal payments, including bribes. Important anti-corruption measures in the health sector (such as legislative amendments, building capacities for inspection,

improvement in cooperation between institutions relevant to fight corruption in the health system, quality control improvement, unique information system) were included in the 2013–2018 National Anti-corruption Strategy (Official Gazette, 2013o) and Action Plan (Official Gazette, 2013p). The Anti-corruption Agency, created in 2010 (http://www.acas.rs/home-5/), is an autonomous governmental body with wide-ranging authority in the field of corruption prevention. It also supervises the implementation of the Strategy and the Action Plan, resolves conflicts of interest, keeps a register of officials, and performs activities regulating the financing of political parties and implements anti-corruption programmes (UNODC, 2011).

Transparency of the work of the Ministry of Health, the NHIF and the health institutions has been improved by setting up and updating websites with all supporting documents (legislation, public invitations, projects, statistics, reports, survey results, fill-in forms), activities and latest news. In 2010, eminent public and private health professionals founded “Doctors against corruption” (http://www.healthcareanticorruption.org/), an NGO which is seen as an important player in the fight against health care corruption. Their main goal is to fight corruption and promote ethical and professional standards among health workers and health care payers. Their activities are aimed at detecting and disclosing improper behaviour in the health system. They also apply constant pressure on the government by engaging in public dialogues and debates to change current policies and laws related to health care. “Serbia on the Move” (SoM; http://en.srbijaupokretu.org/) is another NGO created in 2009 that has brought many corruption issues in health care to the forefront. It is working towards eliminating corruption in the health sector and improving the quality of service for patients by promoting transparency empowering patients to raise their voices against corruption.

Key performance indicators for health institutions, especially in financial terms, have not been established nor monitored. Health institutions are obliged to submit their own financial reports to the NHIF, but there are no legal sanctions for the non-establishment of financial management and controlling systems, nor for the failure to submit an annual report. In 2013, 86% of health care institutions did not submit their annual reports (EY, 2016). Internal audit departments (inside health institutions) do not follow the law. Health care stewardship is in the hands of the Ministry of Health, which does not conduct any type of financial controls in individual health care institutions, nor the wider health system. The Ministry only

monitors the restricted use of funds of individual health care institutions based on agreements concluded with them. Each year, the Ministry of Health publishes a public invitation to apply for programmes (for prevention and control of leading chronic noncommunicable diseases, preventive health care, among others). Individual institutions are free to apply for some of these programmes. After that, the Minister establishes a committee that suggests priority areas of financing from all submitted applications. A general rule is that health care institutions from poorer areas would have higher chances of receiving funds for the stated purposes (EY, 2016).

Currently, there is no concrete data about patient involvement in treatment decisions, either about the impact of reforms or the initiatives to improve user experience. Further, a Situational Analysis of the Western Balkan Countries by the European Patients Forum in 2017 showed that patients' sphere of influence and their participation in decision-making processes is weak in Serbia. Thus, sharing best practices on how to improve patients' involvement into decision-making processes is recognized as a top priority, including the training in patients' rights and monitoring of related laws (European Patients' Forum, 2017).

7.2 Accessibility

According to the 2019 Health Care Law (Official Gazette, 2019a), the principle of accessibility to health care for all citizens in Serbia (that is, all people legally recognized as subjects of the state of Serbia) is assured by providing appropriate health care which is physically, communicationally, geographically, and economically accessible, especially for people with disabilities. Patients have the right to equal access to health services without discrimination by income, place of residence, type of disease or time of access. However, theory and practice differ in the Serbian context. Even though Serbia has a comprehensive universal health system with free access to health care services at the primary care level, inequities in the utilization of health services are present and widespread (Jankovic, Simic & Marinkovic, 2010; Ministry of Health, 2014).

Evidence suggests that benefits are not equal across the population: certain population groups such as the most disadvantaged, the uninsured and Roma experience problems accessing primary care services, which

negatively affects their health (SORS, 2008; Idzerda et al., 2011; Jankovic, 2015). The main obstacle for not using health care is of a financial nature, that is, payment of medical services, then administrative barriers: some of the Roma are not registered with the NHIF despite the right to free health care, due to lack of trust, education and time, language barriers, geographical barriers, discrimination by health workers, previous bad experiences and lack of knowledge about availability of services (Jankovic, 2015). The ongoing Ministry of Health project Roma Health Mediators, implemented since 2008, together with health institutions and associations of Roma civil society provide insight into the health status of Roma and contribute to improved access to primary health care services through various activities (Ministry of Health, 2018) (see section 5.1).

In 2013, 9 out of every 10 citizens of Serbia (91.6%) had their own GP ("chosen doctor") which is a significant increase compared with 2006, when 50.6% had their own GP (Ministry of Health, 2014). Men were found to have a GP significantly less frequently than women (Ministry of Health, 2014). Also, both males and females who belong to disadvantaged classes and males who had lower education were less likely to have visited a GP, regardless of their health status (Jankovic, Simic & Marinkovic, 2010).

Respondents with higher income, higher levels of education, employment, and those living in urban areas, especially in Belgrade, have privileged positions concerning visits to dentists and private doctor's services, which is probably related to their ability to pay (Jankovic, 2008; Jankovic, Simic & Marinkovic, 2010; Ministry of Health, 2014).

Financial constraints were reported by 24.8% of the people surveyed as the underlying reason for not seeking health care, that is, lack of money for paying health services, and it was more common among lower educated people and the poorest (Ministry of Health, 2014).

Serbia lacks a national framework to clearly establish objectives and priorities for different sectors at all levels. A comprehensive health policy prioritizing the equitable utilization of health services, regardless of socioeconomic, demographic and health status differences is pending in Serbia, with a primary focus on the most disadvantaged socioeconomic groups.

7.3 Financial protection

According to the 2013 Serbian National Health Survey (latest survey), during the 12 months prior to the survey, 51.6% of the population experienced OOP expenditures on health care which was more than in the 2006 Survey (44.1%). People from southern and eastern Serbia had the highest OOP payments for health care (58.8%) while the smallest proportion was recorded in Belgrade (48.4%) (Ministry of Health, 2014).

OOP spending accounts for almost 40% of total health expenditure in Serbia (The Economist Intelligence Unit, 2016). The highest OOP household spending was on pharmaceuticals (55.6%), followed by costs for private dental (14.2%) and private diagnostic services (8%). Public outpatient and public dental services account for the lowest percentages of OOP payments (2.1% and 2.0%, respectively) (Ministry of Health, 2014).

In 2013, the percentage of the population that had OOP expenditures for health care services in public institutions was significantly smaller than in 2006, i.e. costs for visiting doctors' offices and costs for hospital treatment were 2.4% (7.4% in 2006) and 1.2% of the population (2.6% in 2006), respectively. Regarding privately owned institutions, 1.3% of the population had costs for outpatient treatment (2.3% in 2006) and 0.6% for inpatient treatment (0.4% in 2006) (Ministry of Health, 2014).

The greatest obstacle for covering the health care needs is financial availability: 24.8% of people in the 2013 health survey stated that they could not afford health care for financial reasons. Obtain dental health care was the most difficult (19.3%) followed by obtaining medical health care (18.0%) and prescription of medicines (14.2%) (Ministry of Health, 2014). The percentage of people that forewent medical health care due to lack of financial resources in 2017 is higher in Serbia (2.9%) than in other EU countries (0.6% in Croatia, 0.2% in Austria, with an EU average of 1.0%). This was true for people in all labour status categories (Eurostat, 2019) (Table 7.2). In Serbia, women (33.1%), lower educated people (35.9%) and the poorest ones (40.1%) are significantly more likely not to be able to meet their health needs (Ministry of Health, 2014).

TABLE 7.2 Self-reported unmet needs for medical examination due to expense (%), by labour status for Serbia and selected countries, 2017

	EMPLOYED	UNEMPLOYED	RETIRED	OTHER INACTIVE PERSONS	TOTAL
Serbia	1.7	5.1	2.7	2.9	2.9
North Macedonia	0.8	2.7	1.1	2.3	1.6
Slovenia	0.1	0.9	0.3	0.0	0.2
Croatia	0.1	1.5	1.0	0.8	0.6
Austria	0.1	0.6	0.2	0.4	0.2
France	0.7	3.0	0.4	1.0	0.8
EU 28 countries	0.5	2.5	1.3	1.3	1.0

Source: Eurostat, 2019

In the Serbian public health sector, three types of OOP patient payments can be distinguished: official co-payments, payments for "bought and brought goods" (i.e. payments for health care goods brought by the patient to the health care facility) and informal payments (under-the-table payments in cash or in-kind gifts) (Hubrecht & Najman, 2005).

In order to strengthen the financial protection of the public health system, in 2002, as part of the health care reform, the Serbian Government introduced official co-payments for services covered by the mandatory health insurance accompanied by an exemption mechanism. The amounts of co-payments ranged from US$ 0.59 up to US$ 30 (World Bank, 2009). According to 2019 Serbian Health Insurance Law Article 16 (Official Gazette, 2019b), there are several population groups that are exempted from OOP patient payments: children up to 18 years of age, pregnant women, the elderly over 65 years of age, physically and mentally disabled persons, persons with infectious diseases and chronically ill people, monks and nuns, persons with low family income, unemployed persons, people on military service, persons of Roma ethnicity without a permanent residence, victims of domestic violence, trafficking, and terrorism and veterans. An assessment by Arsenijevic, Pavlova & Groot (2014) showed that these population groups reported various types of OOP payments for outpatient and inpatient

hospital care. Thus, even though one of the main objectives of the health system reform is to improve equity in health care, the implementation of the exemption mechanism fails to protect the targeted groups.

Informal payments are a common practice in the Serbian health system, with negative effects on financial protection and consumers in health care (CFED, 2015). According to the Euro Health Consumer Index report, in 2016 Serbia had one of the lowest scores of the indicator "Under-the-table payments to doctors", which means that patients were frequently expected to make unofficial payments to doctors for their services (Björnberg, 2017). Serbian women were more likely to pay a bribe in-kind (food and drink), while men were more likely to use money. Cash accounts for 52% of all bribes in Serbia and is approximately 205 euros per person per year (The Economist Intelligence Unit, 2016). The government has no ability to control informal payments and thus they remain unregistered. Payments for "bought and brought goods" are positive in the view of health care users, and they take the highest share of the total annual household budget (Arsenijevic, Pavlova & Groot, 2015).

The study by Arsenijevic, Pavlova & Groot (2015) found that 93.9% of health care users in Serbia reported some type of OOP payments for public health care services. Most of them reported official co-payments (84.7%) and payments for "bought and brought goods" (61.1%), whereas only 5.7% paid informally. The World Bank reported that the incidence of catastrophic payments in 2010 is three times higher in the poorest quintile. Nearly 25% of older citizens have had to deal with catastrophic payments, mostly for medicines (World Bank, 2015b).

7.4 Health care quality

Quality of care is recognized by the government as one of the most important characteristics of the health system in both the public and private sector. Continuous quality and patient safety improvements are anticipated to be an integral part of everyday activities of all employees in the health system (Official Gazette, 2009d).

In 2009, the Government of Serbia adopted the National Strategy for Continuous Strategy for Continuous Improvement of Health Care Quality and Patient Safety (Official Gazette, 2009d) with objectives to reduce: the

uneven quality of health services; the unacceptable level of variation in health outcomes of treated patients; the ineffective use of health technologies; waiting times for medical procedures and interventions; the dissatisfaction of users with provided health services; the dissatisfaction of employees in the health system; and the costs incurred due to poor quality.

In 2007, a Rulebook on Health Care Quality Indicators was adopted and came into effect in 2010 (Official Gazette, 2010d), with the purpose of establishing basic quality indicators in health care. The IPH Batut produced methodological guidelines for the reporting of health care quality indicators by health institutions, with defined methods of collecting, monitoring, calculating and reporting health care quality indicators.

Since 2004, the Ministry of Health has carried out reforms to improve quality of care, including: the reconstruction of health care centres and some hospitals and clinical centres, the upgrading of medical equipment, the creation of professional chambers (doctors, nurses, dentists, pharmacists) in charge of licensing health professionals, and the creation of the Public Agency for Accreditation and Continuous Quality Improvement of Health Care in Serbia.

The percentage of children under 1 year who have received three doses of the combined diphtheria-tetanus-pertussis vaccine (DTP) in 2017 was 94%, for the first dose of MMR was 81% and for the second dose was 91.1% (IPH Batut, 2018g). Complete immunization coverage of children at the age of 15 was 78.7% (IPH Batut, 2018e). In 2012 the goal of 99% coverage for all children with complete immunization was not achieved for the first time due to a shortage of vaccines which led to a higher incidence rates of vaccine preventable diseases in the years following. The share of these diseases in total reported cases of communicable diseases was 0.14% in 2016 and 0.23% in 2012 compared with 0.09% in 2010 (IPH Batut, 2018g). Full immunization coverage for children in Roma settlements is significantly lower (44%) due to access barriers than for the general population, while DTP and measles immunization coverage rates are 64.5% and 63.3%, respectively (SORS & UNICEF, 2014). The Government of Serbia, as a part of the Millennium Development Goals, proposed and implemented measures to reach the goal of 99% complete immunization coverage for all children. Measure implemented included: activities on social mobilization, involvement of all relevant partners in the implementation of the immunization programmes, harmonization of the work with the needs of the community

(e.g. mobile teams for the vaccination of Roma children), continuation of the current good practices (local "Immunization Days") and establishment of a monitoring system (Government of Serbia, 2006). The coverage of influenza vaccination for people over 65 years of age in Serbia is 12.0% (IPH Batut, 2018e) which is lower than in most EU countries (ECDC, 2017).

Patient safety has been measured using 13 different indicators according to the Rulebook on Health Care Quality Indicators (Official Gazette, 2010d). The lack of high-quality data due to incomplete recording and reporting of adverse events and incidents in the health system is problematic. Health professionals do not recognize need for recording and analysing such events and it is very important to raise their awareness on these matters. Unfortunately, there are no incentives supporting this. The same is true for the recording of hospital and surgical wound infections (average rates for inpatient institutions in 2016 were 1.5 and 1.2, respectively). Sterilization control in health institutions is not being undertaken frequently, that is, the regulations that require the control of the frequency of biological sterilizations are not fully respected, which consequently leads to higher numbers of hospital and surgical wound infections. Decubitus ulcers and thromboembolic complication rates during hospitalization per 1 000 discharged patients have decreased in recent years and were 2.1 and 0.3 in average in 2017, respectively (IPH Batut, 2018e).

In terms of indicators for drug prescribing which measure quality of prescribing in primary care, the average annual number of prescription drugs per insured person was 12 to 14 in the period 2001–2013, which is about twice the average of EU countries. This suggests over-prescription of medicines, especially antibiotics (EY, 2016). In-hospital mortality rates and avoidable hospital admission rates for chronic diseases and patient-reported outcome measures are not being monitored.

7.5 Health system outcomes

Since 2004, Serbia has made considerable progress regarding life expectancy and the reduction of infant mortality, although it still lags behind the EU average. Infant mortality rates have declined steadily (from 7.4 in 2006 to 4.7 in 2017; EU average of 3.6 in 2017), whereas life expectancy at birth increased to 75.6 years in 2017 (73.4 in 2006; EU average of 81.0 in 2017) (Eurostat, 2019).

The highest burden of disease in Serbia is due to noncommunicable diseases (NCDs). They are estimated to account for 95% of total deaths. Cardiovascular diseases are the leading cause of death (54%), followed by cancers (22%), chronic respiratory diseases (5%) and diabetes (3%) (WHO, 2018b). Standardized death rates from cardiovascular disease and cancer per 100 000 population are among the highest in Europe, and in 2013 were 991 for males and 836 for females for cardiovascular disease (Townsend et al., 2015), and in 2016 were 388 for cancer for males and 232 for females (Eurostat, 2019). High mortality rates can partly be explained by lack of timeliness in visiting a doctor and subsequent diagnosis at a later stage of the disease when treatment is less successful and death is more likely (e.g. diagnosis of stroke after the point in time when thrombolytic therapy or mechanical thrombus extraction from the clogged blood vessel could have given results, or inoperable stages of breast, cervical and colorectal cancers). As in other middle-income European countries in the region, the health system is unable to respond adequately to all challenges of NCDs. The inability to use the newest drugs for all cancer patients in need, as well as longer waiting lists for radiotherapy (World Bank, 2018c), are just some of the reasons for higher mortality rates. Despite the existence of national programmes for early detection of breast, cervical and colorectal cancers and EU projects that supported the organization of screening for selected municipalities in Serbia (e.g. opening of the National Cancer Screening Office) (see section 5.1.7), the coverage of the target population is still low (e.g. 11.4% for breast cancer, 15.8% for cervical cancer, 5.0% for colorectal cancer) (IPH Batut, 2018e). There is no available data in Serbia for 5-year cancer survival rates (for breast, cervical and colorectal cancers), neither for mortality amenable to medical intervention.

The high burden of NCDs is related to a high prevalence of risk factors such as tobacco use, alcohol consumption, unhealthy diet, obesity and high blood pressure, among others (see section 1.4). The National Health Survey in 2013 showed that 35.8% of adults were smokers, higher than in the previous survey in 2006 (33.6%), but lower than in 2000 (40.5%). Also, the prevalence rate of daily smokers showed a significant increase in the 6-year period (29.2% in 2013 versus 26.2% in 2006). A higher percentage of smoking was recorded in men compared with women (39.4% versus 32.4%), in urban settlements and among persons with the lowest income. More than half of the population (54.4%) was exposed to tobacco smoke in closed premises in 2013 (Ministry of Health, 2014). In Serbia, in the last

15 years, several smoke-free laws have been introduced, which proposed excise and labels on tobacco products, higher prices for cigarettes, obligatory health warnings on cigarette packages and a ban on advertising and sponsorship by the tobacco industry (Ministry of Health, 2007). In 2010, the Serbian Government adopted the new 2010 Law on Protection from Exposure to Second-Hand Smoke (Official Gazette, 2010e) which bans smoking in all public and workplaces and in public transport (although the hospitality sector was exempted). Results from the survey in 2013 pointed out a need to improve enforcement of existing legal regulations, as well as to introduce the ban on smoking in the hospitality sector, as smoking in cafes, restaurants and pubs is still allowed (see section 5.1).

The prevalence of daily alcohol drinkers was 4.7% in 2013, an increase over 2006 (3.4%). Men are almost six times more likely to drink alcohol than women (8.3% versus 1.3%). Also, the habit of daily drinking is the highest among the poorest population. Regarding binge drinking at least once a week (defined as more than six alcoholic drinks per occasion), the prevalence rate was 4.3%, while 16% of the population engaged in binge drinking at least once a month (Ministry of Health, 2014). The main challenge is the lack of a national policy, strategy or action plan to reduce the harmful use of alcohol.

In 2013, 40.4% of persons (above 15 years) were of normal weight and more than half (56.3%) were overweight in Serbia, according to their measured BMI. There was a significant increase in the prevalence of obesity between the two national health surveys (from 17.3% in 2006 to 21.2% in 2013). A considerably higher percentage of overweight people was recorded among the poor, least educated population and those who live in non-urban settlements. Obesity rates were higher in women (22.2%) than in men (20.1%), while the opposite applies to overweight (41.4% in men versus 29.1% in women) (Ministry of Health, 2014).

Almost half of the adult population (47.5%) had diastolic and/or systolic hypertension in 2013, with a higher prevalence rates among men.

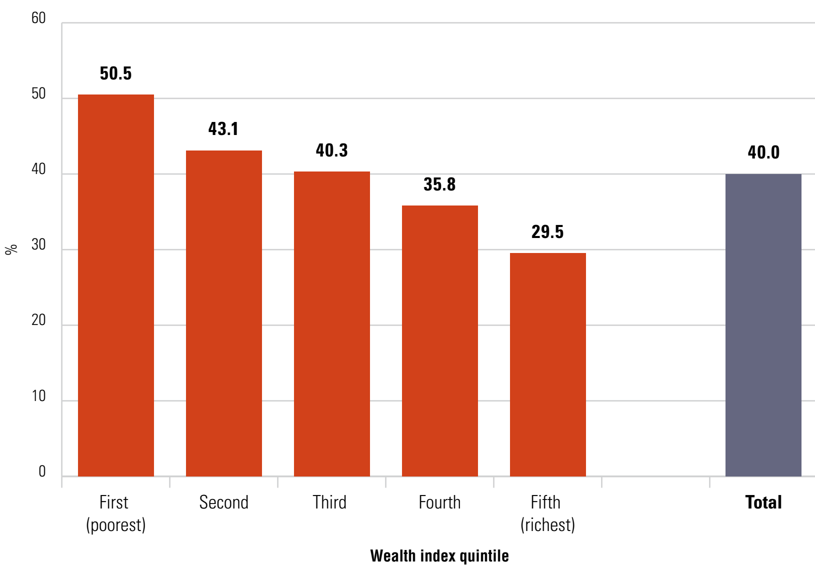
7.5.1 *Equity of outcomes*

Serbia experiences large health inequalities, which represent a great challenge. The results of several studies showed a clear association between sociodemographic determinants and health status and confirmed the

presence of socioeconomic inequalities in morbidity (Jankovic, Marinkovic & Simic, 2011; Jankovic, Janevic & von dem Knesebeck, 2012; Janevic, Jankovic & Bradley, 2012). Compared with people with higher education, lower educated people have a 4.5 times higher chance of assessing their health as poor. Also, the unemployed, inactive, and the most deprived people are more likely to report poor self-perceived health than employed persons and the most affluent group (Jankovic, Janevic & von dem Knesebeck, 2012). According to another study, women, older people, those who live in urban settings, and those with lower education have higher morbidity scores (Jankovic, Marinkovic & Simic, 2011). According to the last National Health Survey, women, people with basic or lower level of education and persons in the poorest category of the wealth index (lowest wealth index quintile) are more likely to report chronic diseases (Ministry of Health, 2014) (Fig. 7.1).

In 2013, more than half the population (57.8%) considered their health as good (significantly more in Belgrade – 61.7%), 26.6% as average, and 15.6% assessed their health as poor (considerably more in southern and eastern Serbia – 18.3%). Also, a significantly higher percentage of persons with a long-term disease/health problem was in the group of those who live in southern and eastern Serbia (43.6%) (Ministry of Health, 2014).

FIGURE 7.1 Population in Serbia who reported to have some long-term disease/health problem by wealth index quintile, 2013



Source: Ministry of Health, 2014

High prevalence rates for risk factors such as smoking, alcohol consumption and hypertension are concentrated among men, poor citizens and people with lower educational level (Ministry of Health, 2014).

The health status of vulnerable population groups, especially Roma, is compromised. Janevic et al. (2012) observed that Roma are more than twice as likely as non-Roma to declare poor self-reported health. The infant mortality rate and the under-5 years mortality rate in Roma settlements are more than two times higher compared with the domicile population and are estimated at 12.8 and 14.4 in 2014, respectively (SORS & UNICEF, 2014). Also, smoking prevalence among Roma is higher than in non-Roma communities. A study conducted in 2010 by the United Nations Population Fund among one thousand respondents living in Romani settlements showed that 53.8% of Roma are smokers, which is significantly higher than in the general population (34.7%) (UNFPA, 2010).

7.5.2 *Reducing inequalities in health*

The European integration process, as the main mechanism for leading dialogue on the priorities of Serbia in the field of social policy and employment, is contributing to reduction of inequalities in health (SIPRU, 2018). The Employment and Social Reform Programme (ESRP) was officially launched in September 2013 by the Government of Serbia and covers the issues of labour market and employment, human capital and skills, social inclusion and social welfare, and pension and health systems. Specific focus is on youth employment due to a high unemployment rate among youth. The most relevant cross-sector strategies which tackle social inclusion and hence inequalities are: the 2013 Strategy for Prevention and Protection against Discrimination (Official Gazette, 2013q), the 2016 Strategy for Social Inclusion of Roma for the period 2016–2025 (Official Gazette, 2016e) and the 2009 National Strategy for Improving the Position of Women and Promoting Gender Equality (Official Gazette, 2009o).

7.6 Health system efficiency

7.6.1 *Allocative efficiency*

There are currently no systems in place to monitor the performance of the health system in general, and to assess its efficiency. For example, there is no information on whether the decisions to expand the social health insurance benefit package or reimburse new expensive drugs or procedures are cost-effective. Despite the fact that Serbia spends 8.8% of its GDP on health (2017 data), there is a mismatch between health spending and health outcomes, due to factors such as corruption, old equipment and facilities, inefficiency in hospitals, poor quality of services and waiting lists, all leading to poor health outcomes (The Economist Intelligence Unit, 2016; World Bank, 2015b).

Curative and rehabilitative services account for about half of total health expenditure, which is similar to the OECD average, while spending on prevention and public health services (around 7.5%) is higher than the OECD average (around 2.7%) (World Bank, 2015b).

Regarding the allocation of resources to different sectors, hospitals account for the largest share of the NHIF budget, with 51% of total expenses in 2014 (expenses for secondary and tertiary level of health care). Health care spending for primary health care institutions was two and a half times lower than for hospitals (20.3% of total NHIF expenses) (EY, 2016). Budgets are allocated based on historical volumes, with no general needs-based resource allocation formula or applied methodology. The system relies excessively on inpatient care, admitting patients to hospitals for procedures that could be handled in primary care. It is also possible that hospitals are not using the most cost-effective combination of factors in providing care (World Bank, 2009).

Pharmaceuticals are an important driver of spending in Serbia. The latest data from 2013 show that total pharmaceutical spending (public and private) as a share of total health spending that year was higher in Serbia (31%) than the average for the western Balkans region (18.4%) or the EU average (20.4%) (Ministry of Health, 2014). There are high private OOP payments on drugs despite high government spending, which indicates gaps and inefficiencies in public sector provision (World Bank, 2015b).

The financing of the Serbian public health system, as well as the preparation and adoption of the budget and financial plans of the NHIF is

regulated by the 2009 Law on the Budget System (Official Gazette, 2009b). However, planning and budgeting inside the health system are not aligned with the budget calendar and fiscal strategy. Note that the process of preparation and adoption of the budget and financial plans of organizations for mandatory social insurance is carried out according to the budget calendar, and 15 December is the final date when the National Assembly decides on the approval of these financial plans; the fiscal strategy is adopted by the National Assembly in January. In the meantime, all public institutions have an obligation to deliver drafts and final budget plans prescribed by the law. Hence, planning and budgeting inside the system is not functioning properly and this is of crucial importance for the financial sustainability of the system (EY, 2016).

The use of Health Technology Assessment (HTA) to increase cost–effectiveness is not yet common in Serbia, there is no official HTA Agency and Serbia is not a member of the European Network for Health Technology Assessment.

7.6.2 *Technical efficiency*

Indicators for measuring efficiency in the Serbian health system show that Serbia does not perform as well as EU countries for both primary and inpatient care.

Though outpatient contact rates are relatively high, that is not true for preventive and primary health care services, despite the relatively high spending on prevention. The share of preventive check-ups in the total number of all check-ups at primary health care level in 2015 was 4%, which is a great concern. Budgets allocated to outputs are not linked to quality of care, which show the need for provider payment reforms to stimulate efficiency in primary care (World Bank, 2015b; IPH Batut, 2017i).

The hospitalization rate (hospital discharges) in Serbia (179 per 1 000) is higher than the OECD average (156 per 1 000) and the average for the western Balkans (117 per 1 000) (2013 data). The reason for this might include: the ageing profile of the population, unnecessary hospital admissions, the existing shortcomings in primary care, the excessive use of acute care beds for long-term care and the inadequate use of day surgeries (World Bank, 2015b).

In 2016, the number of acute hospital beds per 100 000 population was 461.5 (Eurostat, 2019). In 2014, the average length of acute care stay per patient was 8.4 days, higher than the EU average (6.4). The average hospital bed occupancy rate has dropped from 80–85% in 2005–2006 to 68% in 2014, lower than the EU average of 77% (WHO, 2019). Concurrent with paediatrics and dermatology departments at hospitals being half empty, there are shortages of beds for geriatrics and palliative care, which point to a rigid structure that is unable to adapt to the needs of the population, poor management and low work productivity. There is scope to make acute inpatient care more efficient by lowering bed capacity and admission rates through reforms to reinforce primary and preventive care and rationalize the provision of acute and long-term care services (World Bank, 2015b).

There have been limited efforts to bring in reforms to the health system that could help to improve its efficiency. The government has introduced a capitation system in primary care and has launched payment mechanisms based on diagnosis-related groups (DRGs) for hospital care. However, the provider payment system for both primary and hospital care remains largely input-based, with few if any incentives for quality or efficiency. A capitation payment system for primary care, "chosen doctors", was introduced in 2013 with modest performance-based payments, in which their salary varied by 4% based on progress towards meeting service volume and coverage indicators (World Bank, 2015b). However, it caused great discontent among health professionals and was criticized for its huge administration costs, its complicated calculation system, and the huge variation in workload and quality of health services. The output-based payment reforms for acute care at hospitals (based on DRGs) have only been implemented very recently, so hospitals are still largely paid according to line-item budgets.

Inefficiencies persist in public spending for pharmaceuticals; that is, roughly one quarter of the public budget for health was spent on pharmaceuticals in 2013 versus an EU average of 12.3%. There is inadequate control on volumes of outpatient prescription drugs (over-prescription, especially of antibiotics) and increased use in hospitals of high-cost, patented medicines (World Bank, 2015b). The implementation of centralized procurement was introduced in 2013, resulting in some price reductions, particularly in the case of high-volume products and generics. The intent of the central procurement system, which includes both public and private pharmacies, was to improve transparency and combat corruption (Stosic & Karanovic,

2014). The introduction of e-prescriptions in 2016 (named MojDoktor in Serbia) has the potential to bring about substantial savings, and one part of Serbia's health system progress in 2017, according to the European Health Consumer Index, is the effect of it (Björnberg, 2018). According to the World Bank public finance review in 2015, for outpatient prescription drugs, Serbia should consider reforms to reimbursement policies (e.g. introduce flat dispensing fees or a regressive margin for medicines), and better monitor prescription and dispensing practices to control volumes. For higher-cost patented drugs, the recommendation is to adopt innovative negotiation strategies (such as price-volume agreements) to bring down costs (World Bank, 2015b).

Serbia does not currently have a health workforce strategy and education policy has not been coordinated with the needs of health care, so the number of unemployed doctors has been increasing in recent years (see section 4.2). Current policy aims at maintaining present staffing levels in the system, despite the shortage of some specialists (radiologists, anaesthesiologists, cardiac surgeons, etc.), and high unemployment. Low salaries and high unemployment create an incentive for doctors to move to other countries with better work conditions (Stosic & Karanovic, 2014). Information on workforce migration trends is lacking. Also, little has been done to address previously mentioned problems and strategic planning for human resources.

8

Conclusions

Since 2000, significant progress has been made in the development of health policy in Serbia. Although some initial steps were made after the break up of the Yugoslav Republic in 1991, it was not until a political change 9 years later when an ambitious health reform programme was developed. The main aims of the first reforms from 2004–2010 were to decrease health care costs and to strengthen prevention, while after 2012 reforms focused on improving infrastructure and technology and implementing an integrated health information system. Measures also included the restructuring of hospitals to respond more effectively to patient needs and the development of a new basic package of health care services aligned with existing resources. While some progress has been made, the Serbian health system remains underfunded, despite dedicating 8.8% of GDP to health care: this is due to low GDP and low contribution revenue flowing to the NHIF. The health system also remains poorly managed, and with a high public perception of corruption, which involves both patients and doctors. In fact, reforms to improve the performance and transparency of the health system are still pending, and there are a number of challenges.

Firstly, there are inequalities in the use of health services, concentrated in the worse-off, who experience barriers to accessing primary services. The main reason that patients forego health care is lack of affordability. In the area of preventive services, while investments supported by European projects have improved cancer treatment, national screening rates are still very low. The problem is that the level of investment in organized screening programmes is still not enough and consequently, implementation and response remain insufficient. It will also be essential to step up prevention efforts to deal with lifestyle factors such as tobacco usage, alcohol consumption and obesity.

Secondly, there has not been adequate development of human resources for the health system over several decades and the supply of health workers has not been in line with needs. This has resulted in an increasing number of unemployed health workers in some areas, in parallel with an insufficient number of some specialists. This, together with low salaries (among other reasons) has created an incentive for doctors and nurses to emigrate. So far, no strategy has been implemented to address this issue.

Thirdly, there is further scope to improve transparency, which involves both patients and doctors and ultimately affects quality of care. While some progress has been made in this regard, such as with the publication of the List of Licensed Medical Practitioners on the Serbian Medical Chamber's website (which until then was not available to citizens), out-of-pocket payments remain a practice in the country and contribute to the financial burden for households that need to access publicly funded services.

Finally, value-based health care is still to be developed in Serbia and Health Technology Assessment is not currently used to aid decision-making on services and increase cost–effectiveness. In addition, under-funding of health care over many years has resulted in a generally lower quality of public health care services being available for users.

It is expected that, in the coming years, Serbia will continue to develop policies focused on reducing barriers to accessing health care and improving the efficiency of the system, supported by international organizations and in the context of Serbia's continuing EU accession negotiations. Other developments are tied to the 2019 Health Care Law which envisions movement towards centralization by transferring ownership of buildings and equipment back to the national level. The introduction of the capitation system in primary care is the first major payment reform measure in Serbia, where resources are beginning to be based on patient needs and not on staff numbers and structures. Reforming hospital payment mechanisms by introducing DRGs is another measure from which efficiency gains are expected, as well as by increasing efficacy and transparency when contracting health care services.

9

Appendices

9.1 References

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9.3 Useful websites

Agency for Accreditation of Health Care Institutions of Serbia
    http://www.azus.gov.rs/en/

Medicines and Medical Devices Agency of Serbia
    https://www.alims.gov.rs/eng/

Commission for Accreditation and Quality Assurance of the National Council for Higher Education
    https://www.kapk.org/en/caqa/

The Government of the Republic of Serbia
    http://www.srbija.gov.rs/

Health Council of Serbia
    http://www.zdravstvenisavetsrbije.gov.rs/

Institute of Public Health of Serbia "Dr Milan Jovanović Batut"
    http://www.batut.org.rs/index.php?lang=2

Ministry of Health of Serbia
    http://www.zdravlje.gov.rs/index.php

National Health Insurance Fund
    http://www.rfzo.rs/

Paragraf Lex – Electronic Legal Database, Legal and Economic Issues for Successful and Legitimate Business [Pravna i ekonomska izdanja za uspešno i zakonito poslovanje]
    https://www.paragraf.rs/

Statistical Office of the Republic of Serbia
    http://www.stat.gov.rs

UNICEF Serbia
    https://www.unicef.rs/

9.4 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at: http://www.euro.who.int/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over 1200 indicators for the 34 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in All Policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments. With its summer 2007 edition, the Health for All database started to take account of the enlarged EU of 27 Member States.

HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system,

including geography and sociodemography, economic and political context and population health.

2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights, complaints procedures, public participation and cross-border health care.

3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other out-of-pocket payments, voluntary health insurance and how providers are paid.

4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which IT systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.

5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health services for specific populations.

6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.

7. Assessment of the health system: provides an assessment based on the stated objectives of the health system, financial protection and equity in financing; user experience and equity of access to health care; health outcomes, health service outcomes and quality of care; health system efficiency; and transparency and accountability.

8. Conclusions: identifies key findings, highlights the lessons learned from health system changes; and summarizes remaining challenges and future prospects.

9. Appendices: includes references, useful websites and legislation.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation

throughout the writing and editing process, which involves multiple iterations. They are then subject to the following:

- A rigorous review process (see the following section).
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (hard copies, electronic publication, translations and launches).

The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

9.5 The review process

This consists of three stages. Initially the text of the HiT is checked, reviewed and approved by the series editors of the European Observatory. It is then sent for review to two independent academic experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies are restricted to checking for factual errors within the HiT.

9.6 About the authors

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Dejana Vukovic (MD, MSc, PhD) is a full professor at the Faculty of Medicine at the University of Belgrade. She actively participated in establishing the Master's of Management in Health Care Systems as well as the Master's of Public Health at the School of Public Health in Belgrade. As a consultant, she has participated in several projects in the area of improving the organization of health care and delivery and financing of health services. As a result of engagement in international projects in health management, she has published several papers focusing on the competencies of health professionals and their performance. Dr Dejana Vukovic graduated at the Medical Faculty, University of Belgrade, and completed her Master's of Science and a PhD in Social Medicine at the University of Belgrade. In the framework of international cooperation, she completed several international

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Zorica Terzic-Supic (MD, MSc, PhD) is a Professor at the Institute of Social Medicine, Faculty of Medicine, University of Belgrade. She is engaged in undergraduate education of medical students and in postgraduate education through master and PhD programmes in the field of health management and public health. Her key research interests are health management, economic evaluation, quality of life, mental health and lifestyle. She published numerous papers in internationally recognized journals and participated in more than 20 projects. Currently, she is a member of the project team on a research project funded by the Serbian Ministry of Education, Science and Technological Development involved with epidemiological research and rare disease, and a Horizon 2020 project about mental health. She is a member of the Program Council for Center – School of Public Health and Health Management, Serbian Public Health Association, European Public Health Association and Serbian Medical Association (Section of Social Medicine). She is the country representative of Serbia in the European Lifestyle Medicine Association (ELMO).

Cristina Hernández-Quevedo (BSc Ecs, MSc HEco, PhD) is Technical Officer/Research Fellow at the European Observatory on Health Systems and Policies (WHO), LSE Health, London. She edits and co-writes HiT country profiles and works on a range of Observatory studies. She holds an MSc in Health Economics and a PhD in Economics from the University of York, United Kingdom. Her research interests include inequalities in health and lifestyle factors, equity in access to health and social care services and socioeconomic determinants of health. She has published articles on these topics in internationally recognized scientific journals.

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